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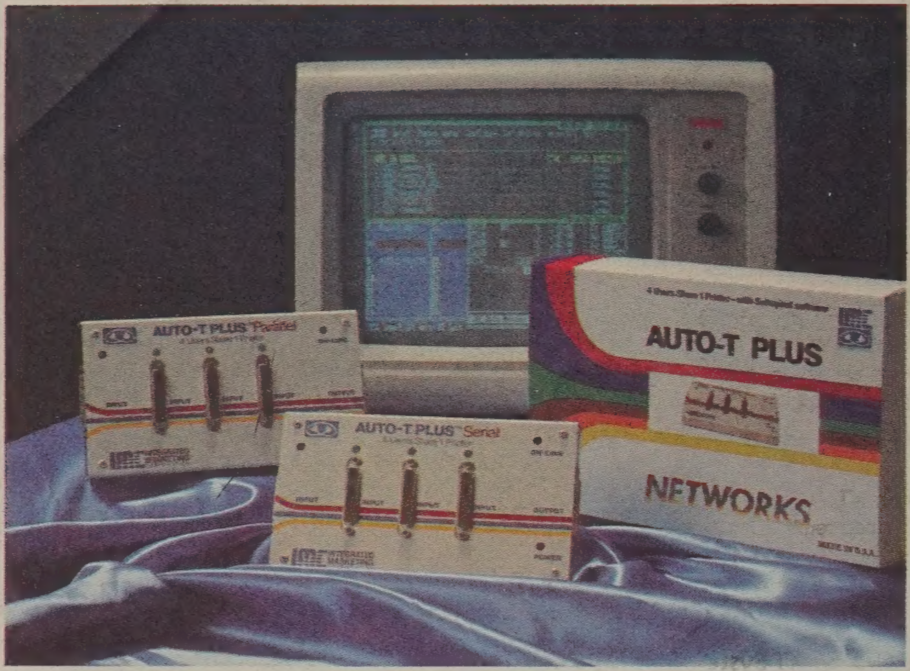
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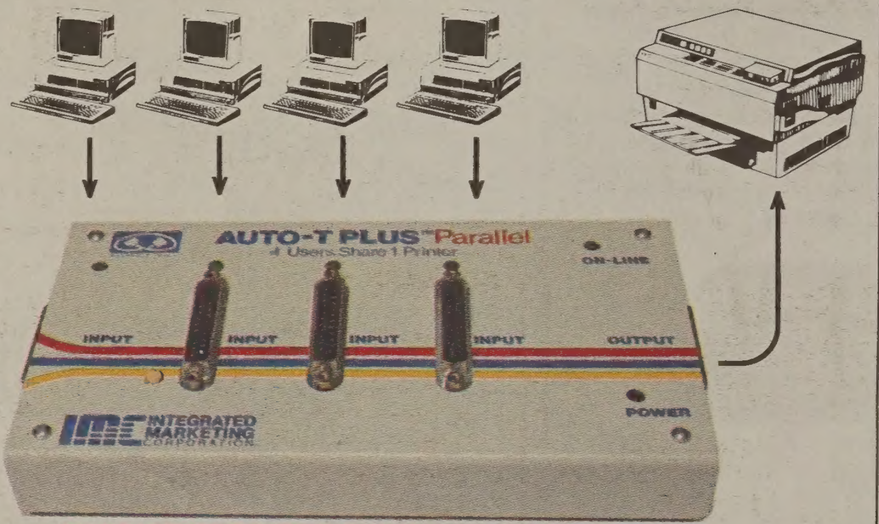
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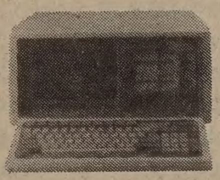

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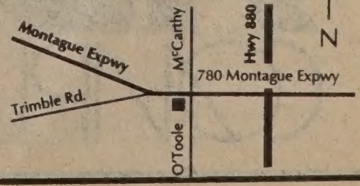

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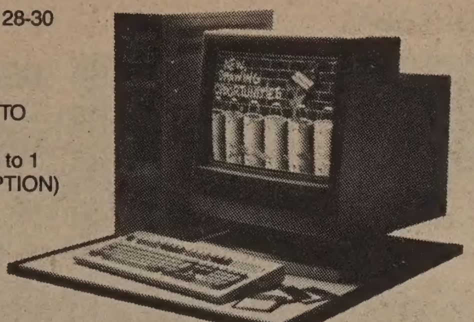

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MICROTIMES™

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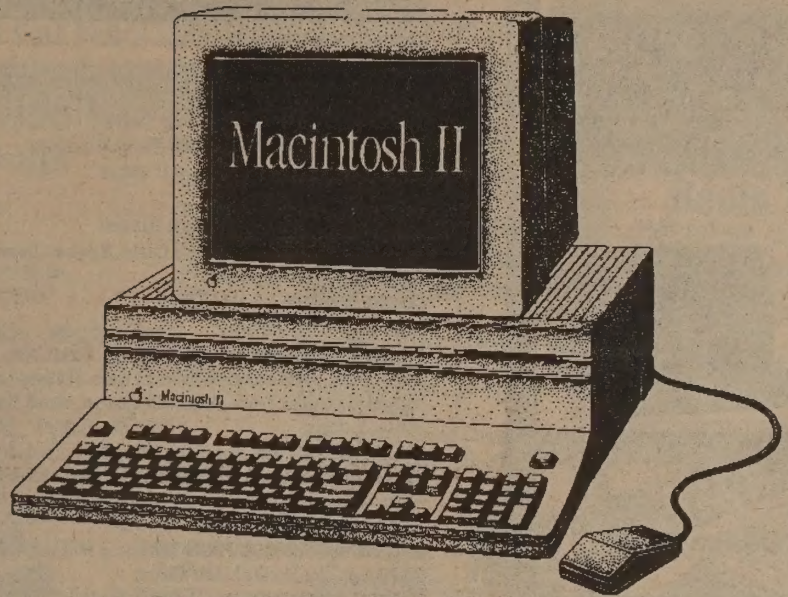

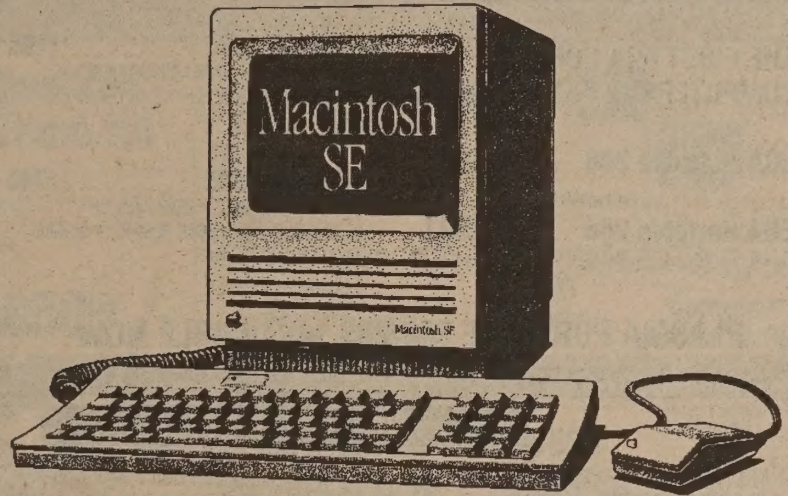

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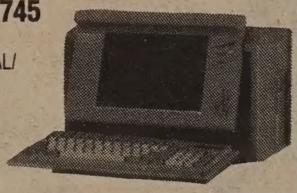

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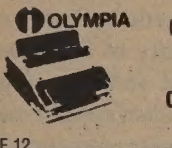

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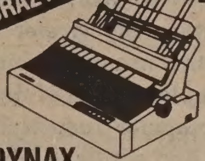

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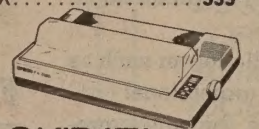

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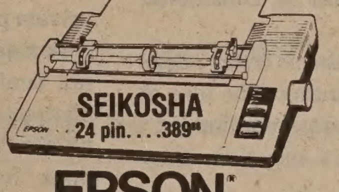

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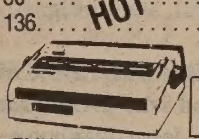

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LETTERS

Woman Against The "Women's Computer"

Thank you for directing my earlier letter to John Dvorak. He has mercilessly excerpted it (and presumably everyone else's) for his October column. Therefore, I would appreciate it if you would print the full text in your letters column, as reproduced below. I've also added a few more comments, based on Dvorak's October column.

"Ok, Dvorak, here's what women want out of computing:

1. Elementary schools, junior highs and high schools that actively encourage women to learn about computers, math and science instead of directing them away from those areas;
2. The same things men want: good job opportunities, readable documentation, useful software and powerful, well-designed computers at reasonable prices;
3. Columnists who avoid insulting terms such as "bimbo" and who avoid printing insulting letters such as A. Jesse Ivanhoe's, which assume that women are devoid of intellectual or professional interest in computers."

To this I would add: in a public forum such as "Dvorak's Last Column," in any professional context and, I would hope, in private, the *only* appropriate terms are "men/males" and "women/females." "Bimbo" is no more acceptable than a racist or anti-Semitic epithet. (Parenthetically, perhaps the editors of *MicroTimes* should review their editorial guidelines to determine why their policies seem to permit printing sexist slurs. I'm assuming that racial or ethnic slurs would be considered unacceptable.)

Lastly, I would've found Ivanhoe's letter offensive regardless of the sex of its author. The idea of a low-memory, low-power self-help computer isn't particularly offensive. Ivanhoe's negative stereotyping of women, however, is.

Lisa R. Hirsch
Richmond

OS/2: Just Say No

I enjoyed the interview with Gordon Eubanks (August, 1988) and am a great fan of Symantec products. I am involved in a "small business" and we use *Q&A*. However, the choice of operating systems looks different from my side of the ledger. I don't believe in throwing away money, which is what involvement with OS/2 amounts to at this time.

This is the way it breaks down:

286 clone 50Mb	1800.00
DOS 3.3	100.00
LIM 4.0 1Mb	800.00
DESQview	100.00
	$2800.00
PS/2 60 40Mb	3200.00
OS/2	400.00
PS/2 board with 2Mb	1500.00
OS/2 applications	?
	$5100.00+

Multiply the above items a few times for the not quite so small business. Even compared to a PS/2 50 ($2500) which is lower performance than my 12MHz clone, the IBM is a poor value. With my clone system I can continue to use all my existing applications without the expense of upgrading to OS/2 level programs. In a few years when the 286 becomes too limited, I can go to a 386 motherboard very cheaply. *DESQview* allows a form of multitasking with today's applications without the unnecessary expense of OS/2. I think the more natural progression is not to OS/2 but toward Concurrent DOS, which is a *multiuser* system with real-time multitasking on server and serial terminals.

In regard to Dvorak's column on the "women's computer": aren't about half the people using computers in business women? Isn't the computer industry a proportionately greater employer of women than any other except teaching and medicine? Isn't it a complete waste of time to try and revive the "home computer" industry? (Mr., Ms.) A. Jesse Ivanhoe will find a little of what he (she) is looking for on the Prodigy system (IBM and Sears).

Bill Copenhaven
Richmond

Free Speech Vs. Property Rights?

I am puzzled by the point of view expressed by Brock N. Meeks in the article "Tap Dancing on the First Amendment" in the August, 1988 issue of *MicroTimes*. I don't think the issue is the freedom of speech, which I dearly espouse, guaranteed by the First Amendment. Rather, it is an issue of private property rights and contracts.

I am not a subscriber to any online service and am not familiar with the details of the subscription contract. However, for paid subscribers, that contract is the controlling element; it sets the limits on your "freedom to speak." There is no conspiracy here—when you contracted with the service you agreed to whatever those limits are.

The issue is not quite so clear for those who have non-paid access to the system. It does seem reasonable, however, to draw a parallel to invited guests. If I invite you into my home or business, your presence there is subject to my whim. If you offend me in any manner, by word or deed, I am perfectly entitled to cause you to leave. There is no conspiracy here; I am entitled to the quiet enjoyment of my property.

It seems then that the major question is whether a communication medium is public or private property. Unfortunately, the answer is not clear. It was once feared that the power of the print medium was too great to be accorded private property rights. However, as time and technology have advanced, it was observed that the print medium was no longer a scarce resource that required close regulation. Owners of newspapers, magazines and newsletters currently enjoy freedoms not yet accorded to owners of broadcast television and radio—e.g., the fairness doctrine does not apply to print media. This, too, will change over time; indeed, it has already begun.

> **"I don't believe in throwing away money, which is what involvement with OS/2 amounts to at this time."**

Now for online services—are they more like newspapers or television? Are they a scarce resource that must be regulated or are they plentiful enough that the "common man" has sufficient access to allow them to be accorded private property rights? With the availability of inexpensive computers and bulletin board software anyone with sufficient motivation and even modest means can establish their own telecommunications medium and promote whatever views suit their fancy.

In the long term, subjecting the telecommunications media to market forces and according them private property rights will result in greater freedom of expression for the individual and greater benefit to the world community.

Donald K. Kinzer
Director of Engineering
Polytron Corporation
Beaverton, OR

Mr. Meeks' article about free speech on BBS nets is less a matter of the First Amendment of the Constitution than a matter of property rights.

Amendment I of the Constitution says "Congress shall make no law....abridging the freedom of speech, or of the press..." and no law by Congress prevents Meeks or [ex-GE employee Shabtai] Klein or anyone from expressing views.

But the editor of a newspaper or magazine has the right to edit letters, kill articles, edit and refuse ads. I know of no magazine that even allows mild criticism of the publication in an ad.

Every BBS System Operator acts like an editor. You cannot type anyting you please. A system operator edits out programs, unsuitable files, foul language, and even disallows obscene passwords according to his standards. It is his BBS.

Just because you pay for using the system does not mean you can set your own standards, nor would buying spraypaint at a drug store allow you to write graffitti on the store walls.

The question asking if a news announcer could be fired for criticizing a product of the parent company won't have an answer until it happens. But Saturday Night Live had a skit entitled "The Last Days in Silverman's Bunker" edited out when network executive Fred Silverman was leaving.

Mr. Meeks shows a lot of zeal and energy in his writing. If I'm ever involved in a struggle for freedom of information, I want him on my side.

John Pilge
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UNIQ/286-10/0*(AT)*	*11.5x*	*13.2 MHz*
UNIQ/286-12/0*(AT/P)*	*13.6x*	*16.0 MHz*

Features:

- 10/12MHz CPU/CHIPset options
- .5MB-1MB of 16/bit RAM capability
- AT-Power & XT-Size Set-up software
- "0/1" wait state options
- 8/10/12MHz speed select options
- Clock/Calendar
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- Six 16/bit, Two 8/bit slots
- Guaranteed DOS, OS/2, UNIX, Novell compatible
- ***EME***/Expanded Memory Software
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- ***QA Diagnostic***/Setup Software
- ***15 Month Dealer Warranty***

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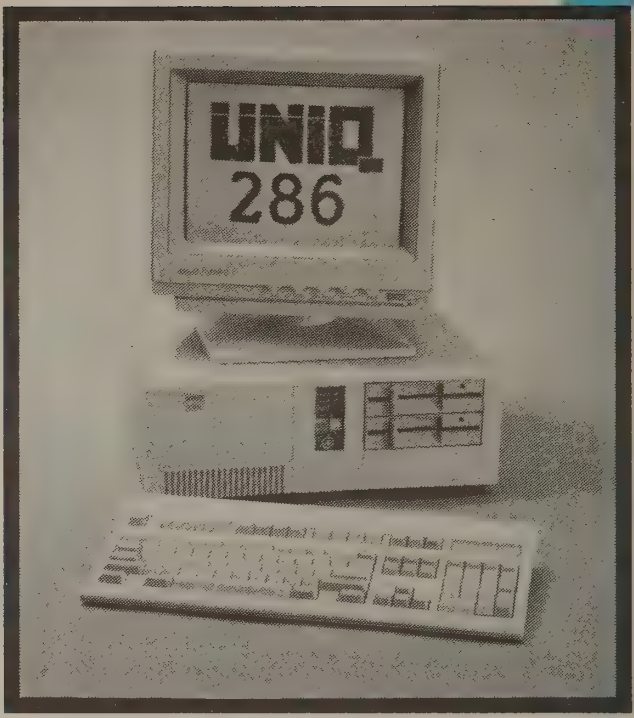

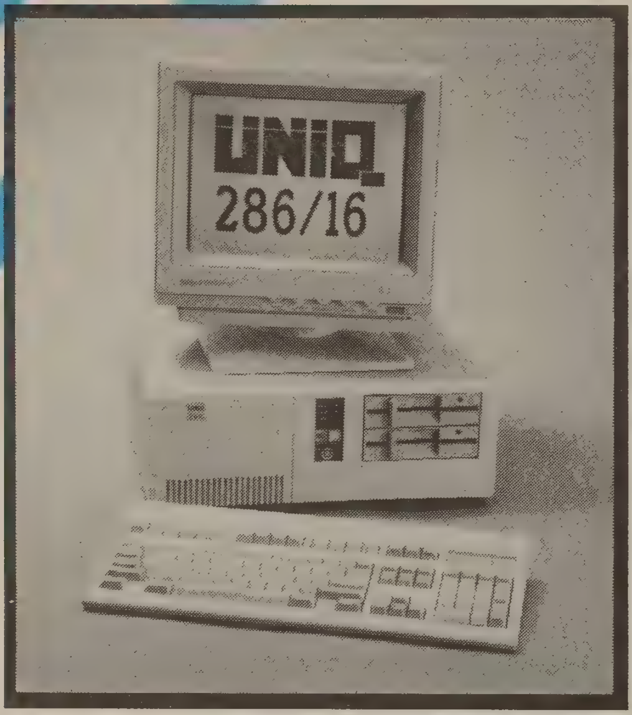

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UNIQ/286-16*(OT)*	*18.2x*	*20.8 MHz*

Features:

- 16MHz CPU/CHIPset
- .5MB-8MB of 16/32 bit RAM options
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- Diagnostic software on-board ROM
- "0/1" wait states
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- Clock/Calendar
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- Guaranteed DOS, OS/2, UNIX, Novell compatible
- ***EME***/Expanded Memory Software
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	SI(4.0)	*Landmark*
UNIQ/386-16*(OT)*	*18.7x*	*21.0 MHz*
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Features:

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- Diagnostic software on-board ROM
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- Guaranteed DOS, OS/2, UNIX, Novell compatible
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- ***QA Diagnostic***/Setup Software
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- 1 MB RAM Installed
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- ***15 Month Warranty***

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- 1:1 Interleave Controller ***(70% Faster for UNIQ 286/386 BASIC's)***

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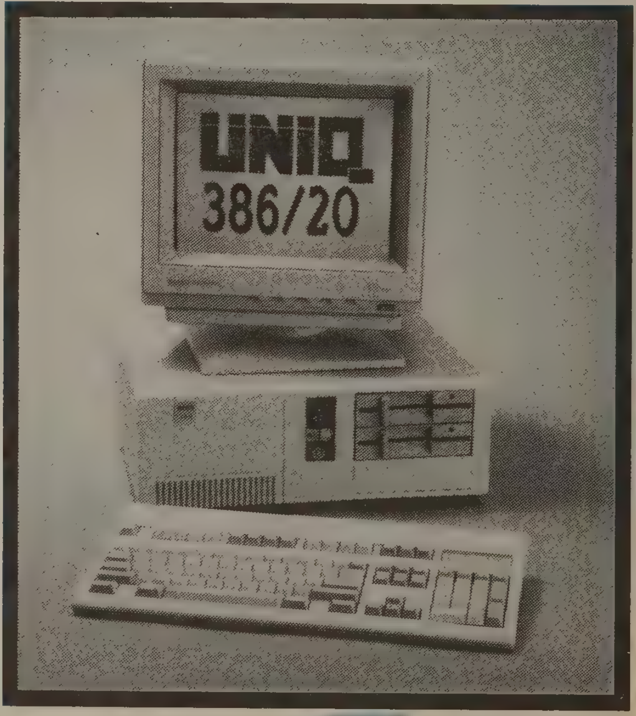
- **UNIQ/386 *BOX***
- **BOX UNIQ/286 *BASIC***
- 20MB Hard Disk Drive
- Monochrome Monitor
- MonoGraphics Video Board
- Parallel Printer Port
  - Parallel Printer Cable

$1,932



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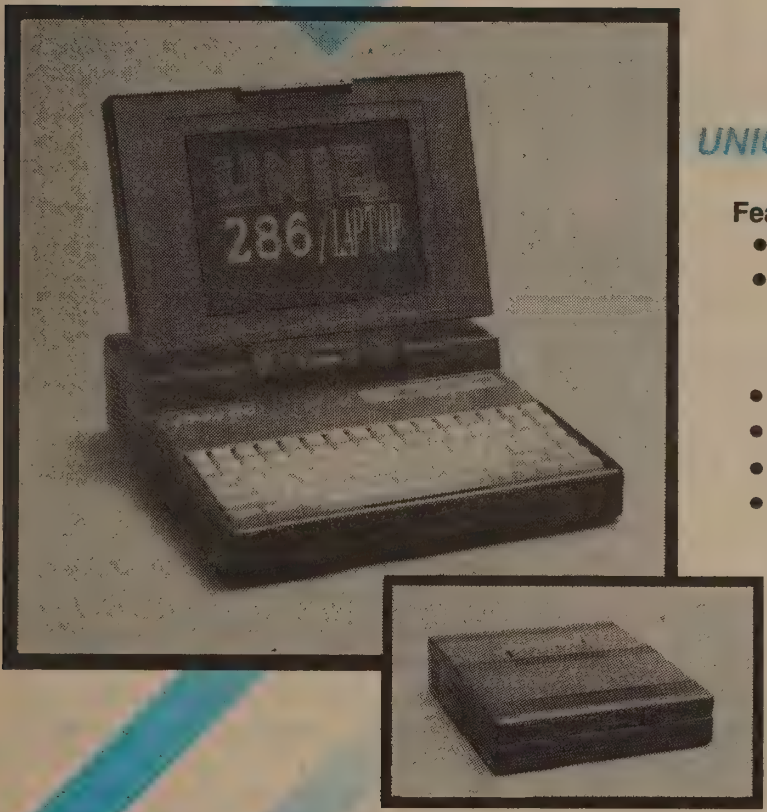

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UNIQ/*286*-16/0(OT) 16MHz • 0 wait • 1MB	1,033	1,262	1,620

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	BOX	*BASIC*	*SYSTEM*
UNIQ/386-16 (OT) 16MHz • 0 wait • 1MB	$1,375	$1,604	$1,962
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UNIQ/386-20 (OP) 20MHz • 0 wait • 1MB	1,424	1,653	2,011
UNIQ/386-20 (ET) 20MHz • 0 wait • 1MB	1,508	1,735	2,093
UNIQ/386-20 (OT) 20MHz • 0 wait • 1MB	1,588	1,816	2,174

* CPU & RAM Prices are subject to change.

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- 1:1 Interleave Controller (70% Faster for UNIQ 286/386 BASIC's)

UNIQ/SYSTEM

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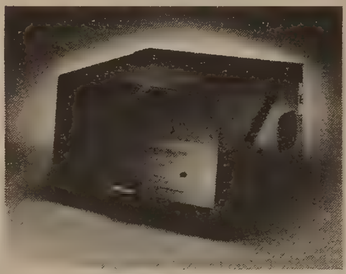
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I refer particularly to the advertisment of American Computer Systems and the correlative effectiveness in selling over the phone. I mention this fact because other advertisers' personnel who answered my queries over the phone were obviously not too interested in helping me make choices and decisions, and would prefer, it seemed, for me to just visit them, and could not wait to hang up the phone.

I feel that while ads are well organized and substantial in data, the function of an advertisement is still to be completed only when the calling prospect is given the proper response and courtesy in answering details, thereby justifying the firm's placement of an ad in the first place.

I also admire and enjoy *MicroTimes* not only for the substantial articles relevant to personal computer users, but also the critical (and even controversial) comments discussed within its pages for the benefit of us users, in relation to little-known facts about products, services, and vital technical data which normal laymen may overlook.

Tony Joaquin
Daly City

Support The Older Mac!

In your May review of *MacWrite* 5.0, you state that *MacWrite* 5.0 runs on all Macs except 128K models. However, when I called Claris to ask about upgrading to 5.0, I was told that it also would not run on the ordinary 512K.

I did not follow up, assuming that version 5.0 requires the 128K ROMs and probably one megabyte of memory. I do wish to urge writers and editors like yourself to bring pressure on software publishers to specify precisely in their advertisements whether certain equipment is essential for new versions, or whether reduced, but still valuable, performance might be possible using less advanced configurations. After all, there must be hundreds of thousands of 512K owners who do not really need or want to buy a Mac Plus—which is itself obsolete in that no more, I understand, are being built—but would appreciate some program improvements for a reasonable price.

Of course, it would be ideal if some simpler upgrade version was made available concurrently for the older machines, but that might not be economically feasible.

Silicon Beach Software is to be commended in this regard. Its version of 2.0 of *SuperPaint* will require the 128K ROMs. But they are also providing version 1.1 for only a $5.00 upgrade fee. This will be the last version to support the 64K ROMs, which is fair enough, but its limited, but useful, new features will be appreciated.

Gifford A. Young
Benicia

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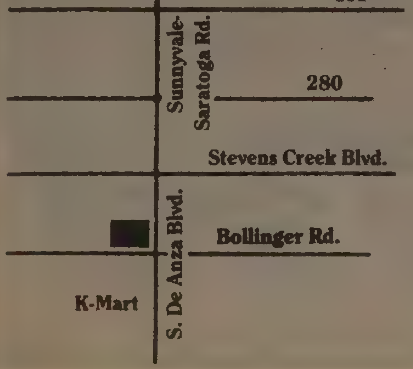

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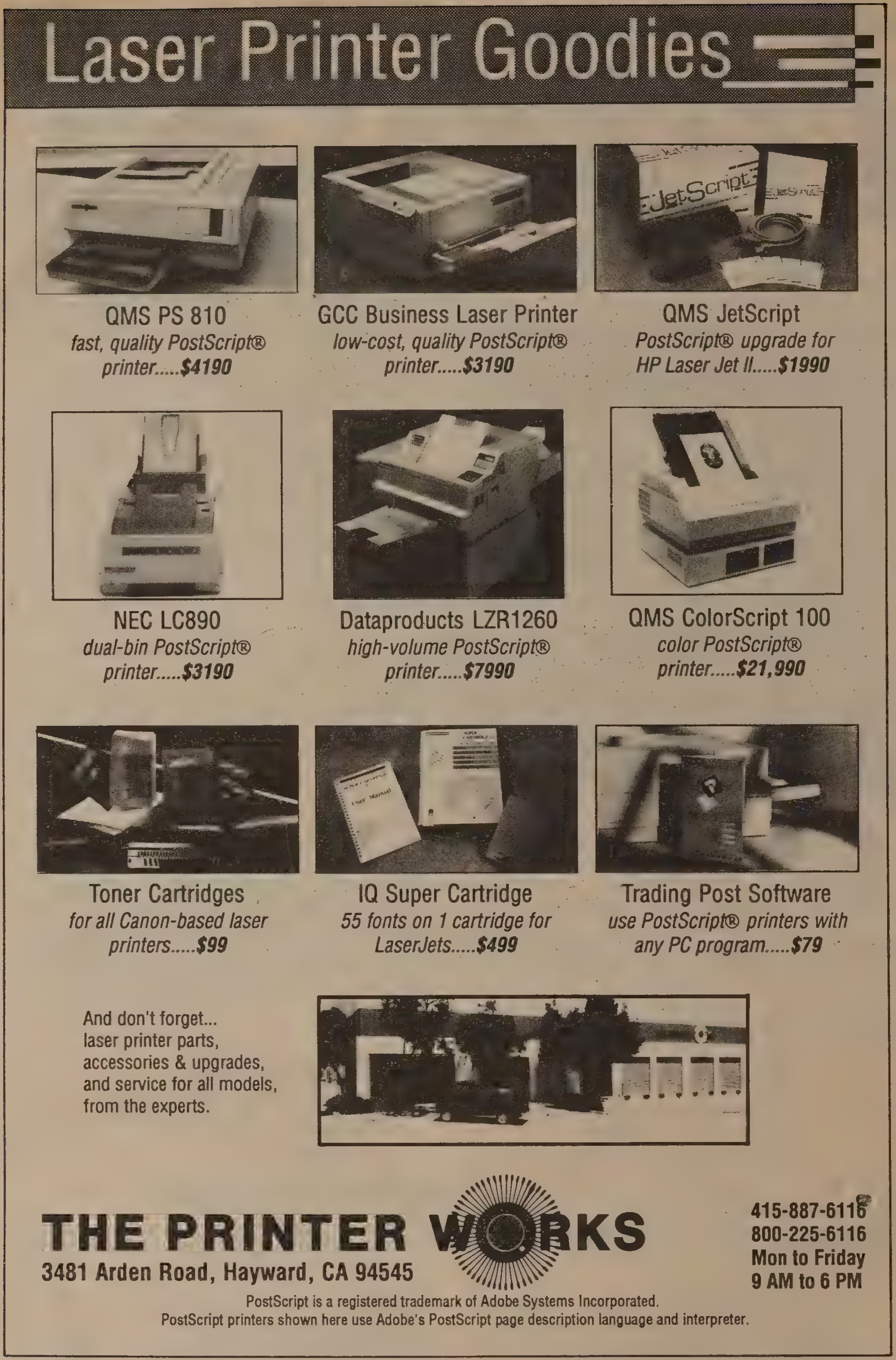

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November 12 De Anza Computer Mart. De Anza College Campus Center, Cupertino. De Anza College. Call: (408) 996-4350.

November 12 How To Upgrade Your Own PC, XT Or AT And Save Money. Rohnert Park. Royal H. Maul Call: (707) 664-2394.

November 12 Shop Till Ya Drop Computer Swap. Cow Palace, San Francisco. Microshows. Call: 1-800-433-7469.

November 14 Applied Logic Systems Demo. Belmont. Prolog Forum Users Group. Call: (415) 657-4075.

November 14 Artificial Intelligence In Manufacturing Talk. Cupertino. AI SIG/SVCS. Call: Rita Zokaei, (415) 574-8225.

November 14 C Workshop Demo. Berkeley. C SIG. Call: Dan Baumbach, (415) 457-0729.

November 14-18 COMDEX/Fall Conference And Exposition. Las Vegas. The Interface Group, Inc. Call: Walter D. Heithaus, (617) 449-6600.

November 14 Producing Your Newsletter On The Macintosh Workshop. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 14 Reality Hackers Forum: Robert Anton Wilson Speaker. Julia Morgan Theatre, Berkeley. Reality Hackers. Call: (415) 845-9018.

November 14-16 Strategies For Implementing Distributed Processing Conference. Ramada Renaissance Hotel, Washington D.C. International Data Corporation. Call: Marji Grubic, (703) 893-0833.

November 15 Introduction To HyperCard Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 15-18 Advanced C Programming: Hands-on Workshop. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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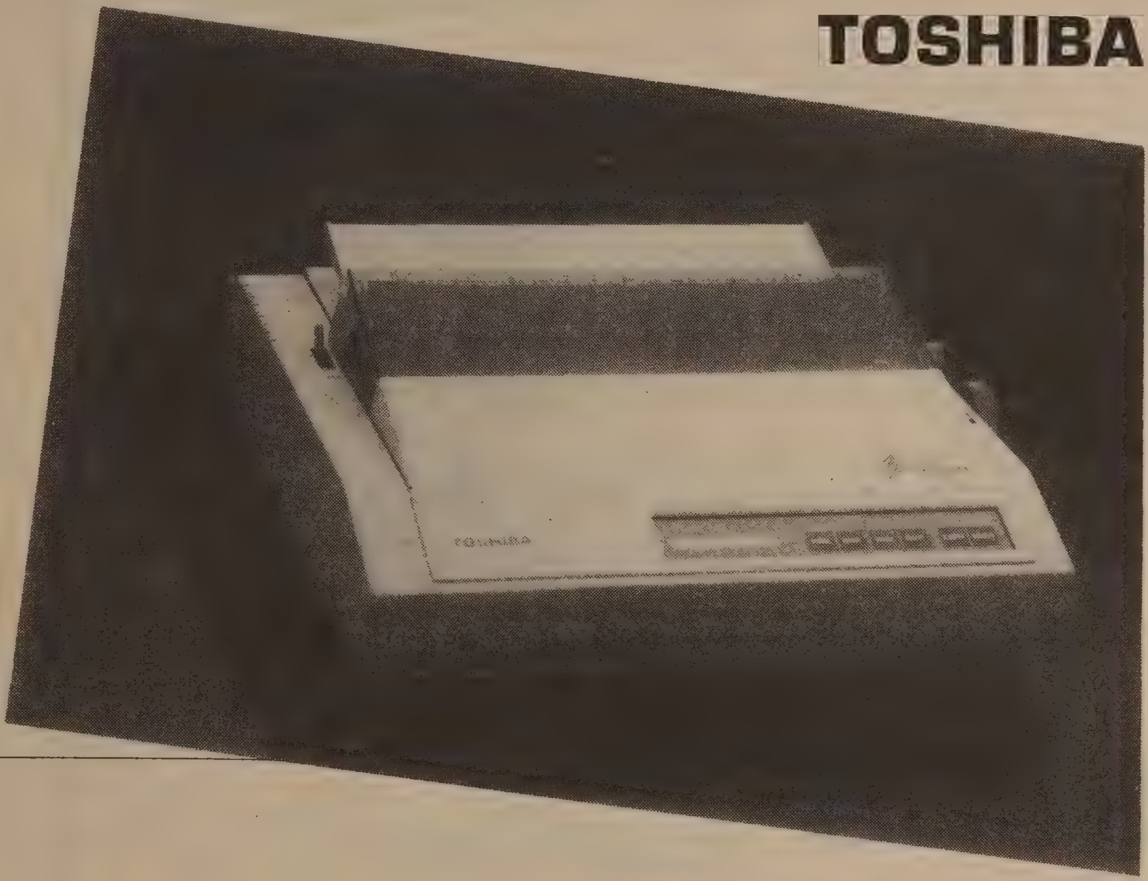

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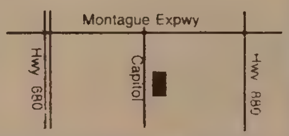

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November 15-18 Introduction To Datacomm & Networks Course. Palo Alto. Integrated Computer Systems. Call: 1-800-421-8166 .

November 15 Producing Publicity Materials On The Mac Course. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 16 High Technology Entrepreneurial Council Dinner/Lecture. Oakland. High Technology Entrepreneurial Council. Call: Rachel, (415) 339-3895.

November 16 PageMaker—Part II Workshop. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 16 The Technology Of Presentations Seminar. Oakland. Executive Solutions. Call: Jim Bickford, (415) 562-4801.

November 17 Breakfast Seminar On Xerox Ventura Publisher 2.0. Sunnyvale. Mip Computers. Call: Donna, (408) 738-8578.

November 17 Microsoft Excel For The Macintosh Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 17 Microsoft Word Class—Part II. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 17-18 Twelfth Annual Western Educational Computing Conference. San Diego. California Educational Computing Consortium. Call: Judah Rosenwald, (415) 338-1212.

November 18-19 1988 Real-Time Programming Convention. Anaheim, CA. Forth Interest Group. Call: Kent Safford, (408) 277-0668.

November 18 Blitzed By Media Show. San Francisco. Artists Using Science And Technology. Call: Trudy Reagan, (415) 856-9593.

November 18 Imagination And Its Importance In The Development Of Computer Animation Seminar. San Francisco. Suite 3D. Call: (415) 882-7063.

November 18 PageMaker Workshop—Part I. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 19-20 Computer Professionals For Social Responsibility Annual Meeting. Stanford University, Palo Alto. Call: (415) 322-3778.

November 19-20 Computer Show. Oakland Coliseum. East West Computer Shows. Call: (415) 388-8893

November 19 How To Upgrade Your Own PC, XT Or AT And Save Money. Martinez. Royal H. Maul Call: (415) 228-3276.

November 19 Learn Photo Manipulation On A Powerful Computer Graphic System Workshop. San Francisco. Computer Arts Institute. Call: (415) 546-5242.

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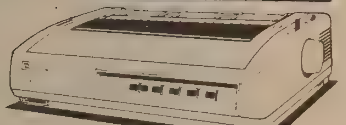

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November 19 Shop Till Ya Drop Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows. Call: 1-800- 433-7469.

November 20 San Francisco Apple Core/Bay Area MacForum. San Francisco. Call: (415) 771-5830.

November 21 C Language Presentations. San Francisco. San Francisco PC Users Group. Call: (415) 221-9166.

November 22 How To Automate Your Business Accounting Seminar. J.C. Luckrich & Co., CPAAAs, 284 Connecticut St., San Francisco. J.C. Lukrich & Co. Call: (415) 864-6770.

November 22 How To Build Your Own XT/AT Compatible Computer Class. Fort Mason Center, San Francisco. Datamed. Call: (415) 284-1024.

November 22 PageMaker Workshop—Part I. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 26 Computer Show. Solano County Fairgrounds, Vallejo. East West Computer Shows. Call: (415) 388-8893

November 26 Vallejo Computer Show & Sale. Solano County Fairground. East West Computer Shows. Call: (415) 388-8893.

November 28 How To Automate Your Business Accounting Seminar. 284 Connecticut St., San Francisco. J.C. Lukrich & Co. Call: (415) 864-6770.

November 28 How To Become More Computer Literate Talk. Santa Clara. AI SIG/SVCS. Call: (415) 574-8225.

November 28 Introduction To Illustrator Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 28 Microsoft Word Special Interest Group Meeting: Word Product Manager Ms. Ruth Karman. Techmart, Santa Clara. Call: Bill West, (408) 356-8805.

November 28 MS Word Users Group Meeting: Word, Windows, Presentation Manager, OS/2 Demo. Call: (408) 356-8805.

November 29-December 2 ADA Programming & Software Engineering: Hands-on Introduction Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166 .

November 29 How To Get The Most Out Of Your IBM PC: Desktop Publishing Options, Techniques & Tools Class. Stanford University. Stanford University. Call: (415) 725-1083.

November 29-December 2 OSI Product Integration Conference. McLean Hilton, McLean, Virginia. Advanced Computing Environments. Call: Wendy C. Gibson, (415) 941-3399.

November 29 PageMaker—Part II Workshop. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

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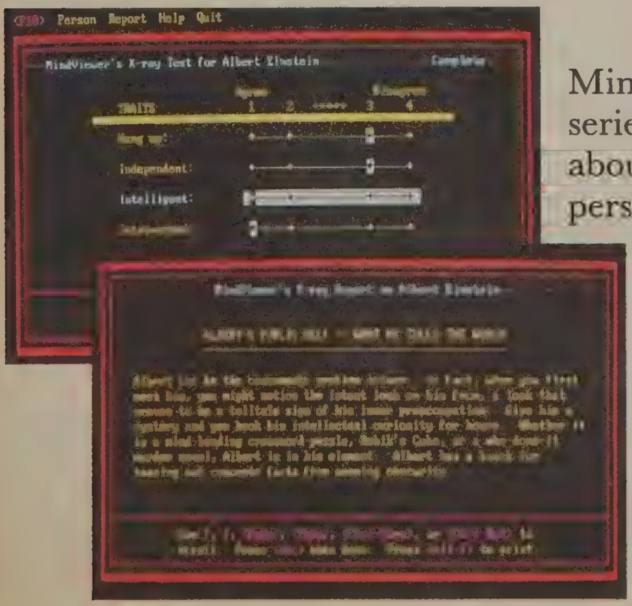

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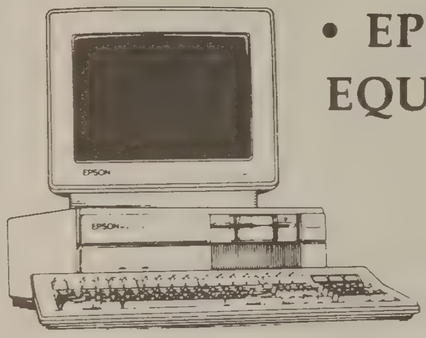

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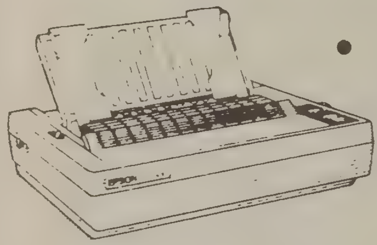

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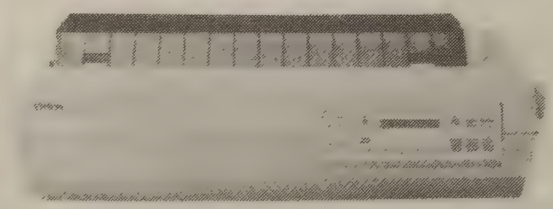

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November 29 Using HyperCard Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 30 Advanced Macintosh: Tricky Problems And Expert Solutions. Stanford University. Call: (415) 725-1083.

November 30 Basic Macintosh Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

November 30 PageMaker Workshop—Part I. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 1-2 AMA Meeting: Advanced Lotus 1-2-3. San Francisco. American Management Association. Call: Robert Newton, (212) 903-7936.

December 1 Desktop Publishing Sampler. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 1 Microsoft Word Class—Part I. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 2 Storyboarding For Animation Seminar. San Francisco. Suite 3D. Call: (415) 882-7063.

December 3 Hard Disk Management Techniques For Your IBM PC, XT Or AT. Daly City. Royal H. Maul Call: (415) 574-6563.

December 3 How To Build Your Own PC/XT Or AT Clone Computer For As Little As $600. Martinez. Royal H. Maul Call: (415) 574-6563.

December 5 How To Automate Your Business Accounting Seminar. San Francisco. J.C. Lukrich & Co. Call: Bryan, (415) 864-6770.

December 5-7 Managing Expert Systems Development Seminar. San Francisco. Technology Transfer Institute. Call: (213) 394-8305.

December 6 HyperCard Sampler. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 6 Intro. Hands-on Javelin Seminar. San Francisco. Mentor Technologies. Call: 1-800-227-5502.

December 6 Learn The Essentials Of DOS Class. Fort Mason Center, San Francisco. Datamed. Call: (415) 284-1024.

December 6 & 13 Network Management Seminar. Mountain View. ProTel. Call: (415) 964-4456.

December 6-9 Software Project Management Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

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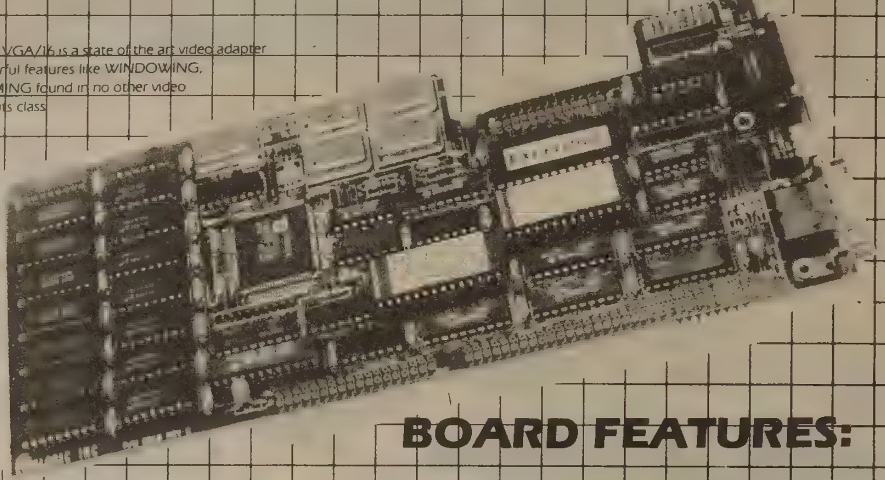

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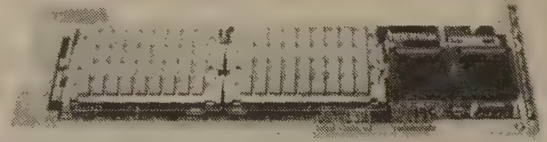

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Industries And Technologies Exhibition. Bordeaux, France. Technospace '88. Contact: Marie-Anne Chambost, 58, rue de la Boetie, 75008 Paris; Tel.: 16.1 45 63 45 72.

December 7 Adv. Hands-on Javelin Seminar. San Francisco. Mentor Technologies. Call: 1-800- 227-5502.

December 7 Basic Macintosh Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 7 The Technology Of Presentations Seminar. Oakland. Executive Solutions. Call: (415) 562-4801.

December 8 Focus 4GL/DBMS Seminars. Sacramento. Information Builders, Inc. Call: (212) 736-0842

December 8 Microsoft Word Class—Part II. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 8 PageMaker Sampler. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 8 PC Professionals Seminar. San Francisco. San Francisco PC Users Group. Call: Kendall Callas, (415) 821-1310.

December 9 California Images Seminar. San Francisco. Suite 3D. Call: (415) 882-7063.

December 9-11 San Francisco Computer Show. Moscone Center. T & G Promotions. Call: Gilbert, (415) 863-6351.

December 10-11 Computer Show. Oakland Coliseum, Oakland. East West Computer Shows. Call: (415) 388-8893.

December 10 De Anza Computer Mart. De Anza College Campus Center. De Anza College. Call: (408) 996-4350.

December 10 Desktop Publishing Workshop. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 10-11 Learn How To Use A Powerful Computer Graphic System Workshop. San Francisco. Computer Arts Institute. Call: (415) 546-5242.

December 10-11 Oakland Computer Show & Sale. Special Amiga Section! Oakland Coliseum Exhibition Hall. East West Computer Shows. Call: (415) 388-8893.

December 10 Shop Till Ya Drop Computer Swap. Pleasanton. Microshows. Call: 1-800- 433-7469.

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December 11 Computer Show. Marin Civic Center, San Rafael. East West Computer Shows. Call: (415) 388-8893

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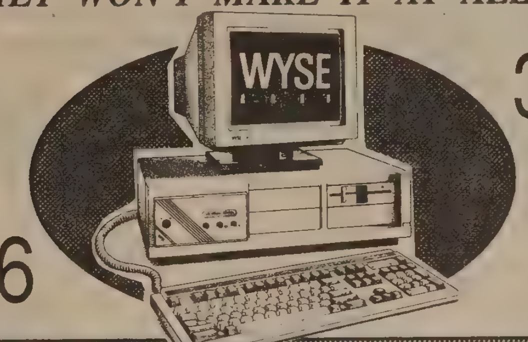

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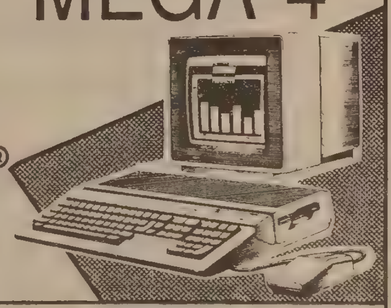

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December 12 C Language Seminar. San Francisco. San Francisco PC Users Group. Call: Dan Baumbach (415) 457-0729.

December 12 Micro Explorer II Demo. Santa Clara. Prolog Forum Users Group. Call: (415) 657-4075.

December 12-14 Neural Networks For Artificial Intelligence Seminar. San Francisco. Technology Transfer Institute. Call: (213) 394-8305.

December 12 OtherPerfect Seminar. San Francisco. San Francisco PC Users Group. Call: Christy Quinn, (415) 644-1855.

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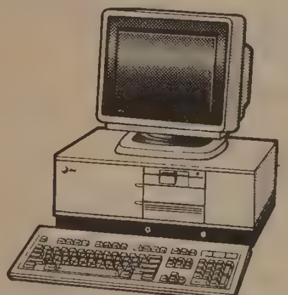
Plus AT&T Computers and Networks  AT&T Authorized Reseller 6386 WGS 40 Meg System Includes 1 MB RAM, Expandable to 48 MB, DOS Keyboard, Monochrome Monitor **$3390**	Multimate Advantage II (MS DOS) **$259**	NEC P 5200 Printer **$579**
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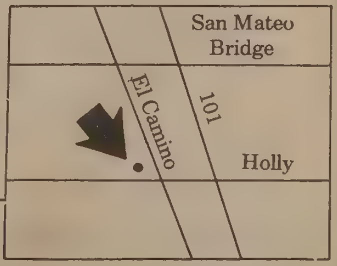

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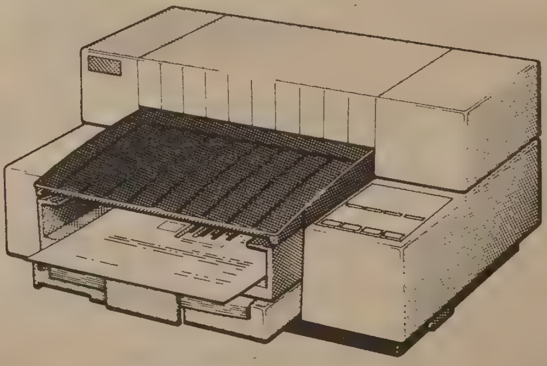
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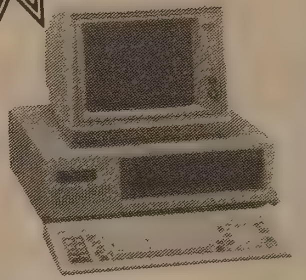
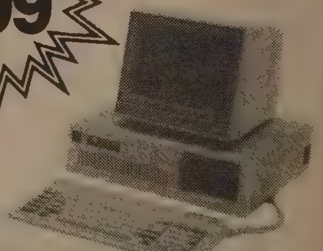
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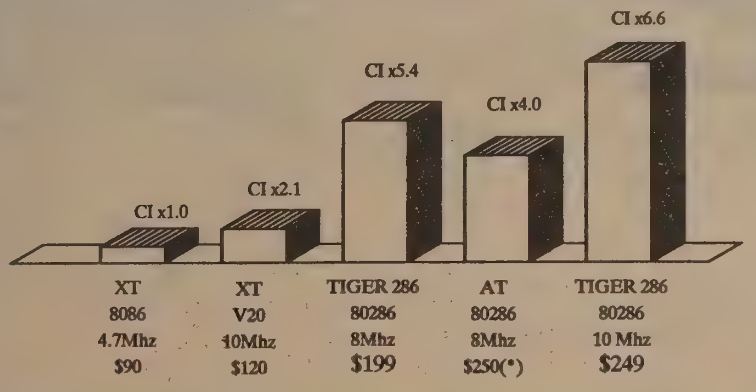

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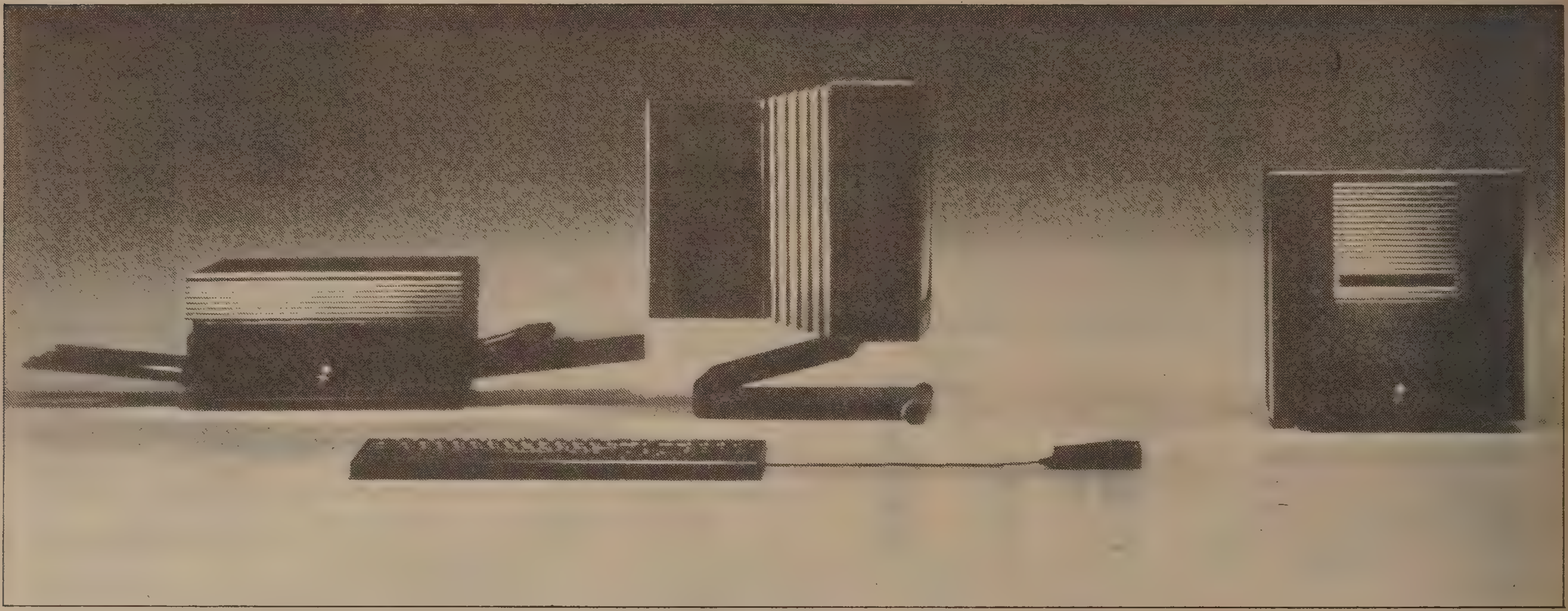
NEWS

AND ANALYSIS

BY PAUL HOFFMAN



The NeXT system's sleek design and state-of-the-art features have moved it to the top of many observers' wish lists, but software and RAM availability may limit its acceptance.

IN THE NEWS . . .

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TOPS Acquires InBox ..40

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

NeXT Computer Gets Mixed Reactions

Steve Jobs' newest endeavor, NeXT, has released its first computer system to an eagerly-awaiting audience. The computer, simply called the NeXT Computer System, has a great deal of revolutionary hardware and software built in, and will be marketed only to colleges and universities. It is designed as the ultimate single-user academic workstation for both professors and students. Since the computer will cost $6500, it is not clear whether enough students or professors will be able to afford the luxury of the technology and power in the NeXT computer.

The announcement was preceded by years of guessing about what the computer would do and who its target market would be. In the month preceding the announcement, the predictions and pronouncements came more and more often. Clearly, NeXT was milking the publicity market for all that it was worth.

The product introduction was made at Davies Symphony Hall in San Francisco, and was an elaborate multi-media affair. This strategy seemed to work, since the announcement was carried by all the network news crews as well as all the leading newspapers in the country. However, the reception for the computer was not as positive as NeXT expected.

Hardware

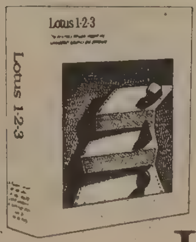
The computer's hardware has many significant improvements over the current state of the art in personal computers. It uses the very fast Motorola 68030 CPU running at 25MHz, making it much faster than either a 80386-based computer or a Mac II.

To speed it up even more, NeXT designed two chips that make CPU-intensive tasks (such as watching a network or synthesizing music) use much less of the CPU's resources, freeing them up for more processing. The 68030 is supported by a 68882 floating-point accelerator for faster math computations and a Motorola 56001 digital signal processor for handling complex problems that involve many numbers at once. The NeXT computer is the first personal computer to come with the digital signal processor built into the system, and its inclusion will make producing extremely high-quality music and handling complex equations much faster.

Instead of a floppy or standard hard disk, the NeXT computer comes with a 256Mb laser/magnetic optical disk. This optical disk can be read from and written to just like a standard hard disk, but it comes on a removable cartridge that is the size of a standard CD disk. Thus, users can take the $50 disk out of their computers and bring it with them to other NeXT computers.

The drawback of this scheme is that all software must be distributed on these cartridges, which are much more expensive than standard floppies. Jobs justified this by saying that he expects all documentation, both for the system and for application software, will be distributed

Diamond Software's Best Buys from Lotus Development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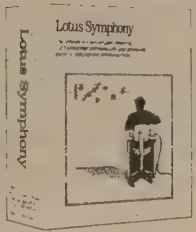
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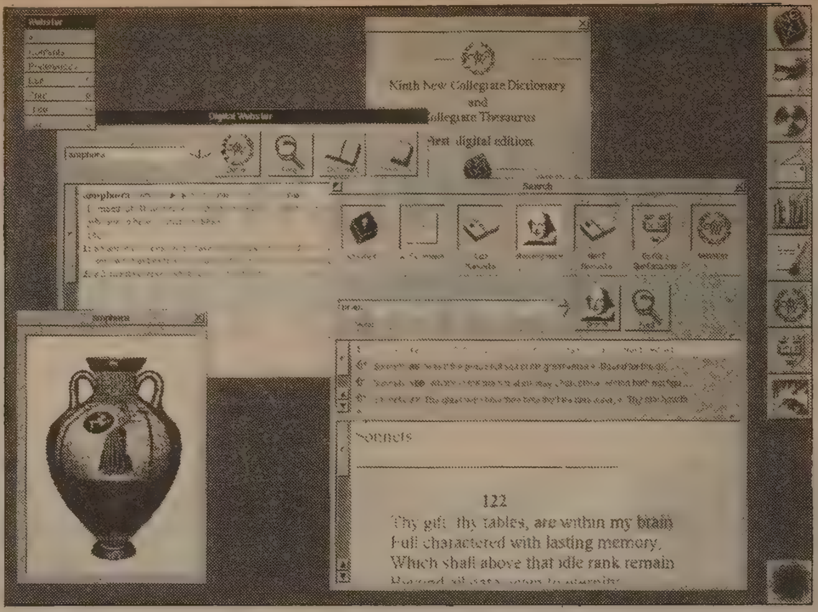
on disk only and printed out from disk if necessary. Thus, the $50 cost for the optical disk is not large, relative to having to distribute on floppies and print the entire manual.

NeXT built the machine expecting it to be expanded. There are three slots for additional boards, and the RAM can be expanded from the eight megabytes that come with the machine to 16Mb.

You can also add other disk drives in the two full-height drive slots at the front of the machine. NeXT will sell standard Winchester hard disks to complement the optical drive. A 330Mb disk will cost $2000; a 660Mb disk will cost $4000. From the sizes of the available and future drives, NeXT clearly assumes that people will need lots of room for their data. The main computer comes with an Ethernet coax port as well as two serial ports.

The monitor, keyboard and two-button mouse for the system are separate from the main unit. The MegaPixel display is an extremely high resolution 1024 by 1024 pixels with gray scale. Thus, although it does not have color, it can reproduce black and white much more effectively than standard monochrome monitors since it has two shades of gray in addition to black and white. The keyboard and mouse attach to the monitor, as do a microphone, headphones, and stereo. To give the user more desk space and less wire clutter, the monitor is on a raised stand and gets its power in the same cable that is attached to the main system. The keyboard looks almost identical to a standard Macintosh keyboard, down to the Command key.



Thy gift, thy tables, are within my brain
Full charactered with lasting memory,
Which shall above that idle rank remain

The NeXT's high-resolution screen shows multiple applications running in separate windows. Applications, reference works and program tools are bundled with the machine—on an optical disk.

Summary of Features

CPU: Motorola 68030 running at 25 MHz

Memory: 8Mb of RAM

Storage: 256Mb magneto-optical disk drive

Hardware: system unit, high-resolution monochrome screen, keyboard, mouse, laser printer optional

Operating system: Mach, a UNIX derivative

Software: application development, database, mathematics, word processing, sound, reference books

Price: $6500 for the system, $2000 for the laser printer

Availability: soon for developers, 9 months for students and professors

Software

While the hardware is impressive, so is the supplied software. NeXT has included many applications with the system package. The underlying operating system is Mach, a UNIX derivative developed by Carnegie-Mellon (which also is stockholder in NeXT). Like UNIX, NeXT's version of Mach is fully multi-tasking. The user never sees UNIX, however, since NeXT's graphical interface called Workspace Manager performs all the tasks of the UNIX shell. The interface resembles the Macintosh and Microsoft *Windows*, but has many extensions and changes based on NeXT's view of the weaknesses of those interfaces.

The operating system has all the necessary additions for networking through the system's Ethernet port. NeXT will support Sun's NFS network file system to make all computers on the network appear as one giant computer. Files can be sent to other computers with the TCP/IP protocol.

The applications that come with the system are:

NextStep, a set of tools for developing programs based on units built by others. You can create these units in NeXT's object-oriented C++, also included with the system. The application toolkit includes an interface kit and access to Display PostScript, the graphics back-end used by the system. Thus, anyone who wants to develop programs can do so in a high-level language (C++) or NeXT's object tool kit, which most people without programming experience should be able to use with only a small amount of training. Other development tools include the GNU ANSI-compatible C compiler and C debugger from the Free Software Foundation, GNU Emacs editor, and Allegro CL Common Lisp from Franz, Inc.

The Digital Library, a set of reference works and a display/search system for them. The system can pull up text and images through an extensive index-

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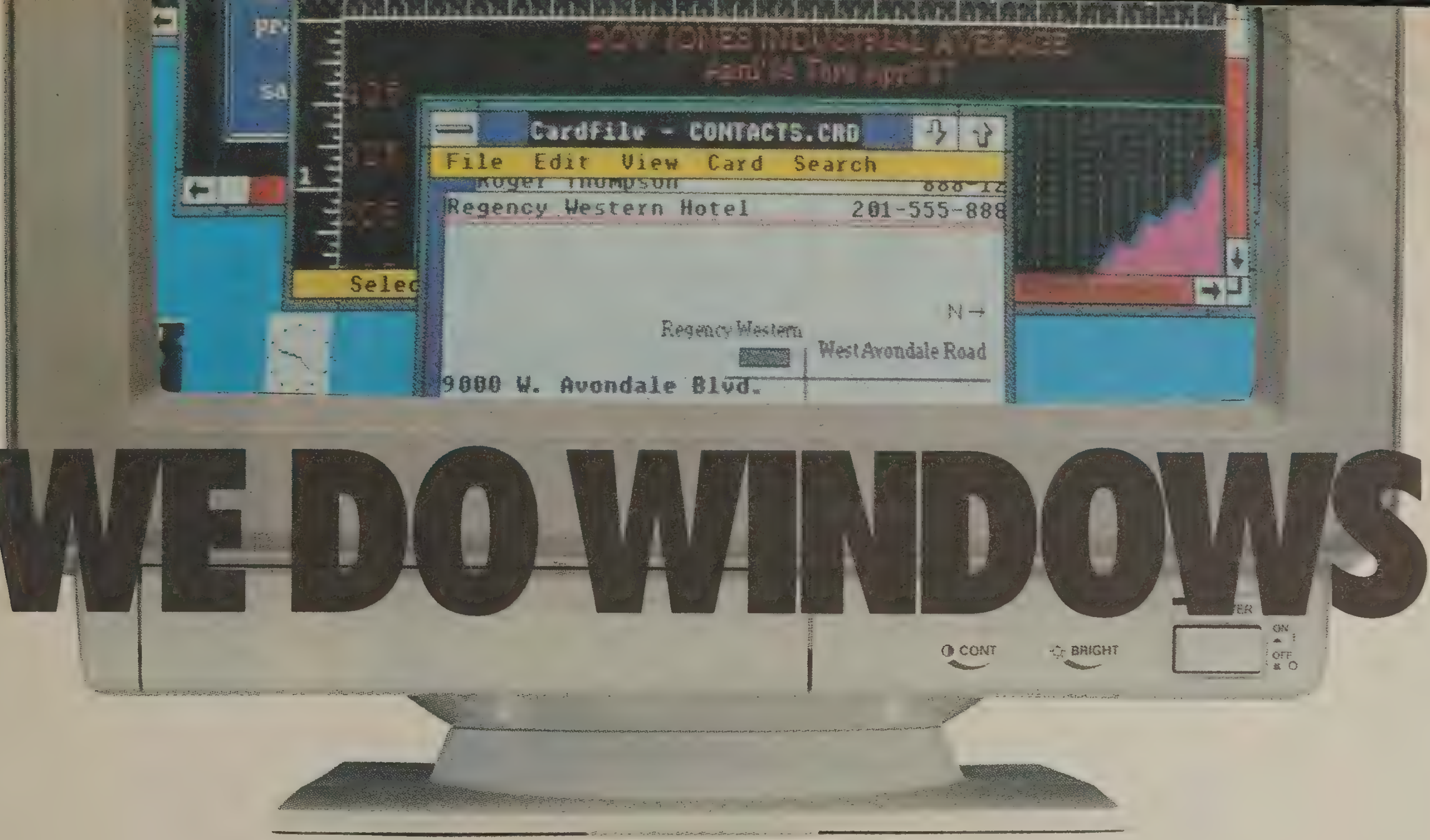
Lotus Postpones 1-2-3 Release 3

Fueling speculation that Lotus cannot deliver a new version of *1-2-3* that works adequately in 640K of memory, Lotus officially announced that it will miss its second postponed deadline and will release the product sometime in the second quarter of 1989.

The announcement was widely cheered by Lotus' competitors, who have been making inroads into Lotus' market as users await the new version of the popular program. Lotus said that they are "fixing bugs and fine-tuning the product," but did not explain why this would take six months.

Recently, the fine print in Lotus' ads began to tell its users that they would need a full 640K of RAM to run the next release, and Lotus has been briefing large sites that they may need even more if they use 1-*2-3* with RAM-resident programs such as networking utilities. Many *1-2-3* users expressed dismay at the long delay and said that they would begin looking more carefully at other products that already have more features than *1-2-3*, but retain compatibility.

Lotus added that the delay in *1-2-3* Release 3 would also delay other related products, such as *1-2-3* for the Macintosh and IBM mainframes. Lotus indicated that it might enhance release 2 in the next nine months in order to keep its customer base happy, although there were no hints what those improvements might be. Earlier, Lotus announced that everyone buying *1-2-3* version 2.01 would get a free copy of Funk Software's *Allways*, which helps users print out spreadsheets better than the current version of *1-2-3*. Lotus is still offering a free upgrade to Release 3 to all new buyers of version 2.



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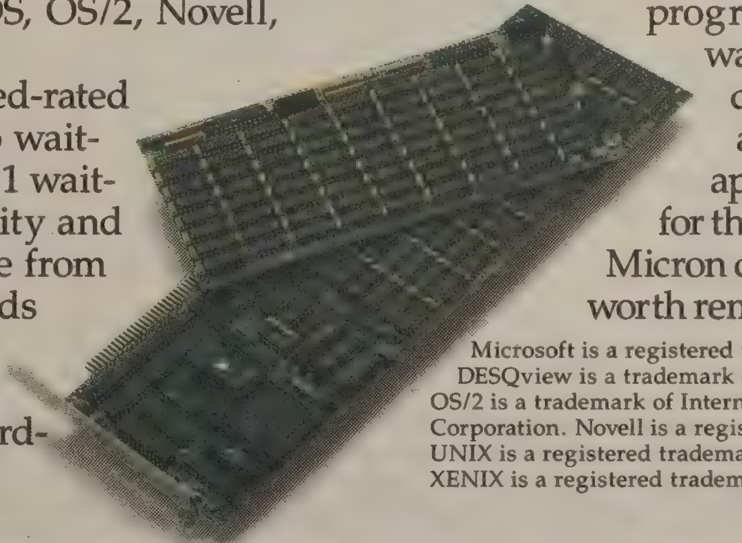

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ing system inherent in the Digital Library software. Included with the computer are *Webster's New Collegiate Dictionary, Webster's Collegiate Thesaurus, The Oxford Dictionary of Quotations,* the complete works of William Shakespeare, and all of NeXT's technical and user manuals.

WriteNow word processor, similar in features to the one which runs on the Macintosh.

Mathematica, the advanced mathematics processor from Wolfram Research.

SQL database server from Sybase.

Jot personal text database management system.

Music and sound synthesis software.

NeXT feels that this gives students and professors all of the tools that they would need to do regular research. Of course, other developers will create tools for the NeXT system that will fill in places where NeXT did not provide software, such as CAD/CAM, drawing and spreadsheet.

Sound

The synthesized sound from the NeXT machine was as good as a CD player. Using the built-in digital signal processor, the machine can generate exceptionally high quality sound without straining the CPU. Jobs emphasized that NeXT assumes that high-quality sound (such as digitized voice and music) will become important aspects of computing in the future.

Printer

NeXT also announced a 400 dot-per-inch laser printer that works with the system and costs only $2000. Although NeXT bills the printer as a PostScript printer, it isn't: all of the PostScript processing goes on in the computer, not in the printer. NeXT caught a fair amount of flak for making it appear that they brought the cost of PostScript laser printers down to the range of regular laser printers, when in fact the printer has fewer inherent capabilities than the current crop of $2000 laser printers. In essence, the NeXT printer simply receives an image of the page from the computer and puts it on the page without any processing.

The printer will print at 400 dots per inch, compared to 300 dots per inch for most standard laser printers. This almost doubles the resolution on the page, since this translates to 160,000 dots per square inch, compared to 90,000 dots per square inch. Unfortunately, the printers were not working at the introduction, and NeXT was not sure when print samples would be available for judging the quality of the print.

The IBM Connection

During the presentation, Jobs announced that NeXT's development tools and user interface software (NextStep) were being licensed to IBM for use in its computers which run UNIX. Although NeXT made this sound like a big deal, IBM's press release downplayed the importance of it by saying that the agreements "permit IBM to support the same application programming interfaces as NextStep." In IBM language, this means that they will offer them to customers as options, not as the standard interface. IBM did not commit to using NextStep as their primary interface, nor did they give even an estimate of when NeXT products would be made available to clients.

Although some industry observers felt that the announcement would induce developers to write for NextStep and therefore for the NeXT computer, others noted that IBM treats AIX, its UNIX variant, like an unwanted relative. Only a very small number of IBM clients use AIX, which is one of the reasons IBM was so willing to offer it to the Open Software Foundation as a base of the OSF UNIX. AIX runs poorly on IBM's mainframes and is unwieldy on the PS/2. Although the IBM RT with AIX is selling better internationally than in the US, it is still a tiny market. Thus, NextStep on AIX does not constitute much of a software development base and will probably not affect most Macintosh and IBM PC developers who will migrate to the NeXT computer.

Market

The weakest part of the entire system may be its marketing. NeXT is only selling the computer in higher education markets, and no business people will be allowed to buy the first batch of computers. However, many college representatives at the announcement expressed skepticism about the price. Generally, most felt that only the most well-to-do students could possibly afford it, especially when the NeXT machine is put next to not-as-expensive

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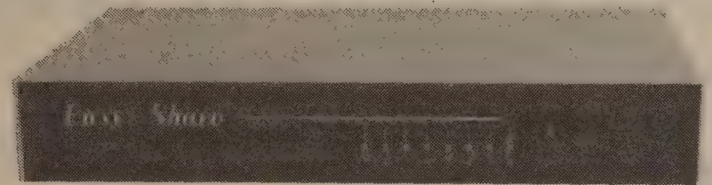

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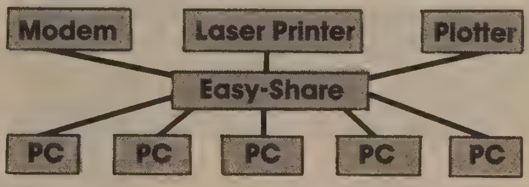

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(or powerful) competitors that cost less than a third as much. Although NeXT did an admirable job meeting all the demands of their educational advisory board, some members of the board said privately that they may have gone overboard on cost.

NeXT will sell the machine directly to universities for $6500. Most schools mark up the price only a small amount, usually under 10%. Thus, the machine will cost around $7000 to each professor or student. This is in the same range as low-end Sun systems, and many people expect Sun to respond to NeXT with higher power or lower educational prices within six months (although Sun raised their prices by 7% the day after the NeXT announcement).

Software developers who went to NeXT's developers conference the day after the announcement came away with mixed feelings. While the product seems good and solid, they too were very worried about what the market for the machine would actually be. They were also concerned with the price of the distribution media (a single $50 disk), and the speed of their programs. Although many praised the apparent ease of programming of NeXT's interface, especially relative to the Macintosh and Microsoft *Windows*, they were not convinced that the finished programs would run fast enough. Many, however, intend to order machines to test them and look at the possibility of creating non-traditional programs and objects.

The first computers will be out with only preliminary software within a month, according to the company. They will not be available in their finished form to universities until the middle of 1989. NeXT will sell the computer only to U.S. colleges, at least initially, and would not say if it would sell to American businesses or foreign colleges after that.

Federal Appeals Court Says States Can Pirate Software

In a case that should have software producers quaking in their boots, a federal appellate court affirmed a lower court ruling that says that any state entity (such as a state-sponsored university or state agency) may pirate software freely without being sued.

The Ninth Circuit of the U.S Court of Appeals, ruling in the case *BV vs. UCLA*, affirmed what many lawyers thought was a faulty US District court ruling, and, in unequivocal language, said that the lower court was correct on all counts of its logic. This leaves any copyright holder unable to sue a state or state agency for copyright infringement.

The case is quite simple. According to the facts of the case, UCLA bought one copy of a program that was created by BV Engineering and made three copies of the program and ten copies of the manual. BV then sued the university for copyright violations. The state defended UCLA's actions by saying that the Eleventh Amendment of the U.S. Constitution makes the state immune to any suit not specifically permitted by Congress. Since the copyright law does not say anything about whether or not states can be sued for violation of the copyright code, the state (and all of its agencies) is immune. Both the federal district court and the court of appeals agreed with California.

In ruling, the Appellate Court agreed with an earlier decision that "Congress may abrogate the State's constitutionally secured immunity from suit in federal court only by making its intention unmistakably clear in the language of the statute." The court also said that Congress must express its intention "unmistakably and specifically." Since the Copyright Act of 1976 only mentions states twice in relatively minor areas, the court decided that Congress never clearly intended to take away the states' immunity to suits.

The Appellate Court found that some of BV Engineering's arguments were sound, but not good enough for the court to make all states liable under the copyright law. BV argued that the part of the Constitution that covered the creation of the copyright code was clear in that the purpose of copyright was to give authors exclusive rights. BV also argued that the state should be liable for trial in state court; however, copyright cases can only be brought in federal courts, where the state is immune.

Thus, a state may not be brought before a federal judge for an infringement of the copyright code because Congress never stated that States should be liable for copyright infringement. Until the U.S. Supreme Court overturns the Appellate Court decision or Congress changes the copyright code to make it applicable to states, anyone in any state agency may freely copy books, articles and software.

The Software Publishers Association, which

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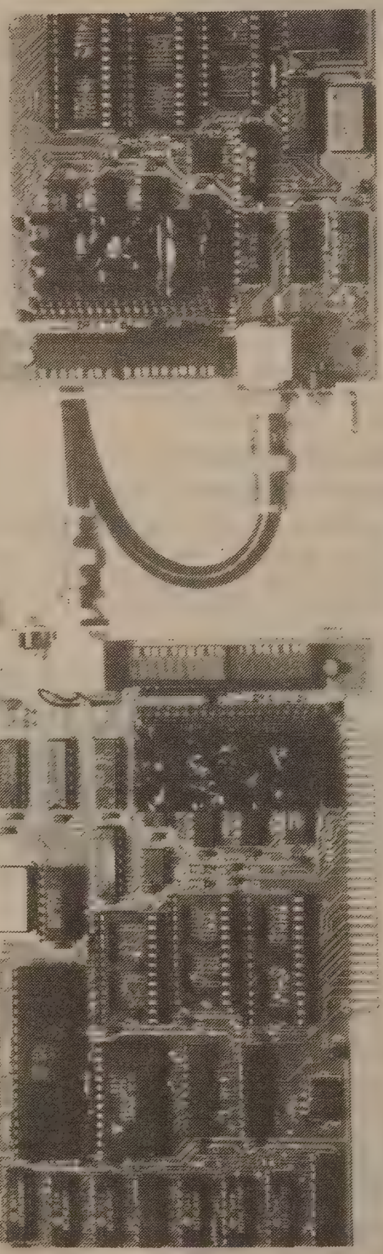

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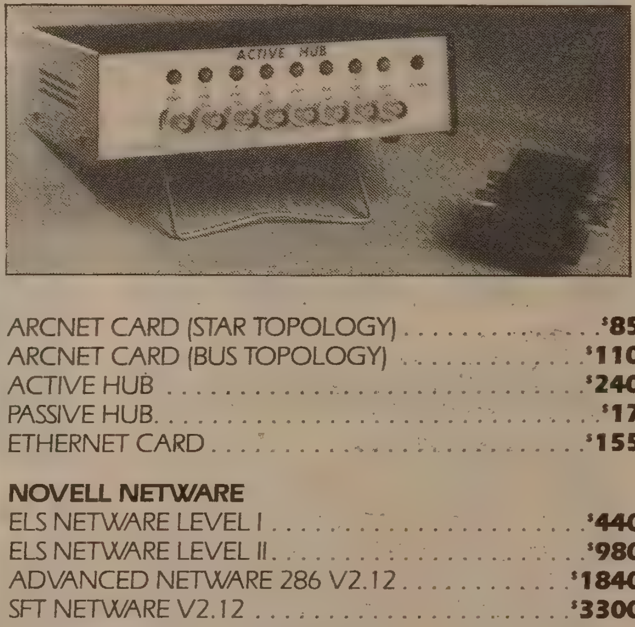

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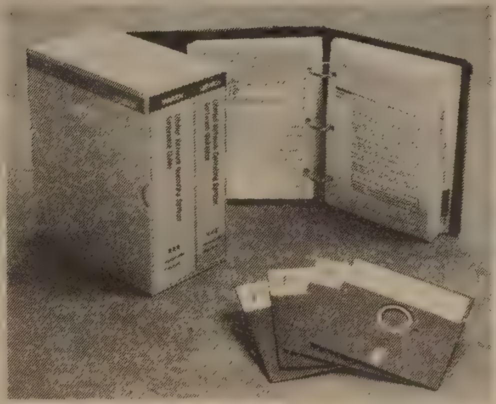

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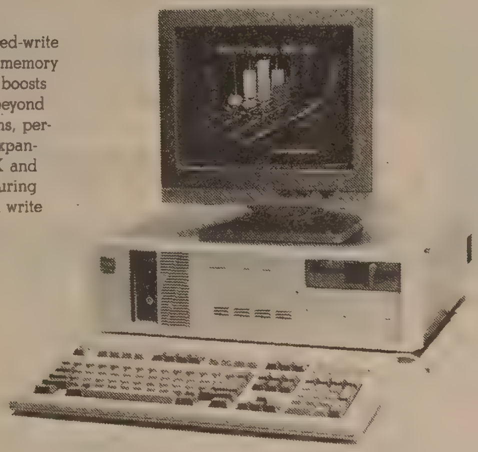

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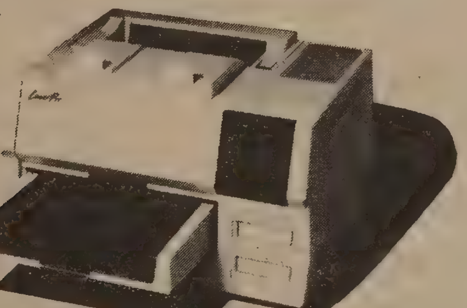

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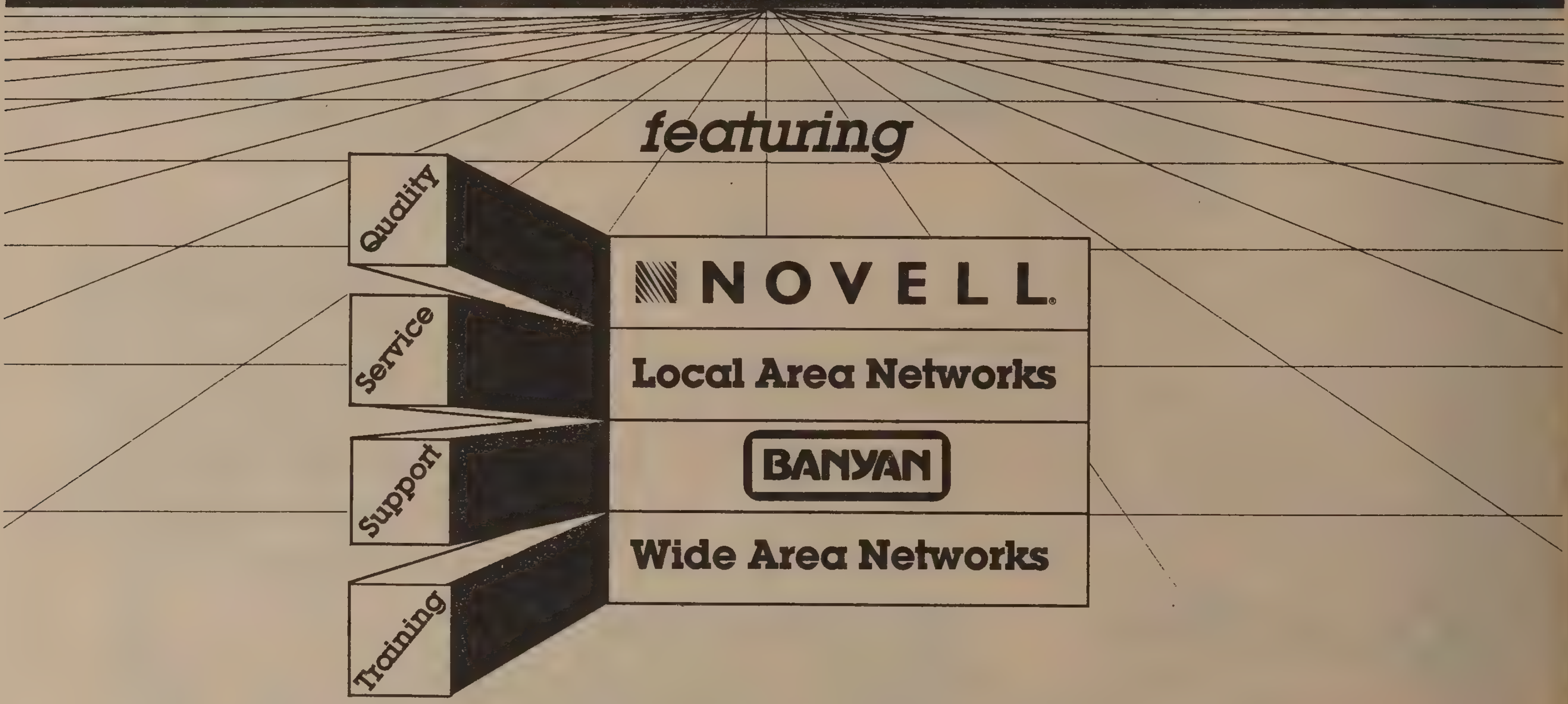

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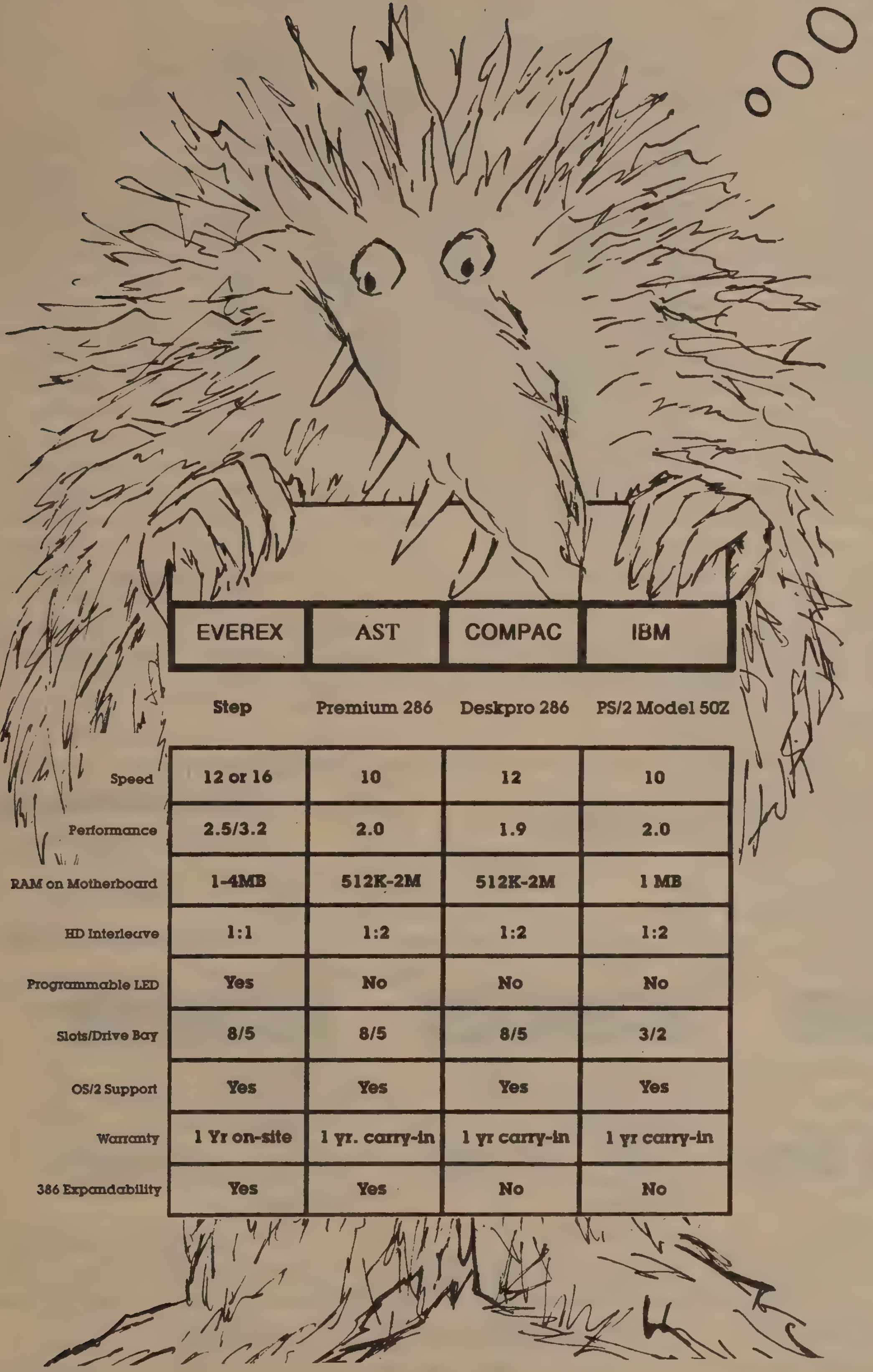

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	Step	Premium 286	Deskpro 286	PS/2 Model 50Z
Speed	12 or 16	10	12	10
Performance	2.5/3.2	2.0	1.9	2.0
RAM on Motherboard	1-4MB	512K-2M	512K-2M	1 MB
HD Interleave	1:1	1:2	1:2	1:2
Programmable LED	Yes	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2
OS/2 Support	Yes	Yes	Yes	Yes
Warranty	1 Yr on-site	1 yr. carry-in	1 yr carry-in	1 yr carry-in
386 Expandability	Yes	Yes	No	No

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9. Warranty

EVEREX computers and all EVEREX components—including hard disks, monitors, and peripherals come with a full year of on-site warranty. This service is provided through NCS which has 106 locations nationwide.

10. 386 Expandability

All EVEREX 286 computers with the exception of the 286/20 can be upgraded to a 386 through a user installable kit. This transforms your 286 PC into a 386 using the 80386SX.

11. Price

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NEWS AND ANALYSIS

helped BV Engineering in the case, announced that it will attempt to appeal the decision to the U.S. Supreme Court. Many lawyers agree that, although UCLA has a solid case and two strong rulings in its favor, the Supreme Court could change its stance on how specific Congress must be in light of other clear statements (such as the intent of the Copyright Act).

Many software companies are contacting their congressional representatives about making a quick but definitive change to the law to bring states under its aegis. Unfortunately, almost every congressperson is out trying to get reelected right now, so it will be tough getting their attention.

Halon On The Way Out

Halon, the most common chemical used in fire systems for computers, should be phased out as soon as possible, according to a new study from the U.S. Environmental Protection Agency. According to the EPA, Halon is more damaging to the earth's ozone layer than chlorofluorocarbons such as Freon. Halon is about the only compound used for fire extinguishing systems in computer rooms and in hand-held extinguishers sold to many personal computer users. The EPA is hoping that new halon will stop being produced within ten years.

TCP/IP Standard Gets Push From Industry Conference

Getting computers running different operating systems to talk has always been a problem. Usually, manufacturers would come up with a hacked-together solution for two systems and hope that it would work with their solutions for other systems.

TCP/IP, a protocol developed by the Department of Defense for connecting its dissimilar computers, has been viewed as perhaps the best hope of bridging the gaps. At Interop '88, a convention based around the TCP/IP inter-computer protocol, dozens of hardware manufacturers and third party companies showed new software and hardware that use TCP/IP to connect personal computers, minis and mainframes.

The industry group promoting TCP/IP also announced its support for a new protocol for managing TCP/IP networks. The Simple Network Management Protocol (SNMP) lets TCP/IP networks work together under a single management strategy so that system administrators at sites with many TCP/IP networks can control them centrally. It also gives them assurances that their TCP/IP networks will work with Open Systems Interconnect (OSI) networks when the OSI standard is finalized in the next few years.

One of the announcements which generated the most interest was Apple's introduction of MacTCP, which allows Macintoshes to connect to TCP/IP networks. Although other vendors had connected Macs to TCP/IP networks before, this was Apple's first solid announcement supporting TCP/IP. MacTCP can run on any Mac, including Mac 512KE, over either Ethernet or LocalTalk. It will work with AppleTalk, so that users can access both types of networking. MacTCP will work as part of the operating system, and will be sold on a site-license basis beginning early next year.

TOPS Purchases InBox

In recent years, electronic mail has become considered part of the networking system software. To further that belief and to tie down a larger market share, TOPS has purchased the rights to *InBox* from Symantec and intends to distribute it as part of the next version of its Macintosh networking package. This should go a long way toward creating an identifiable standard for electronic mail that other developers can work with. Since *InBox* works on both the Macintosh and PC, TOPS will be able to make an even stronger link between PCs and Macintoshes.

The *InBox* development team will also become part of TOPS, which is in turn part of Sun Microsystems, and will continue their work in making *InBox* support a wide variety of types of messages, such as FAX and scheduling notices. In addition, TOPS said that they will gateway to other email systems such as UNIX mail, MCI Mail, CompuServe and VAXmail, in the next release of their networking software. TOPS will start distributing *InBox* commercially immediately. ☐

2

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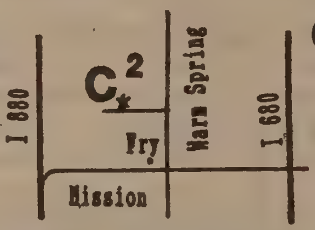

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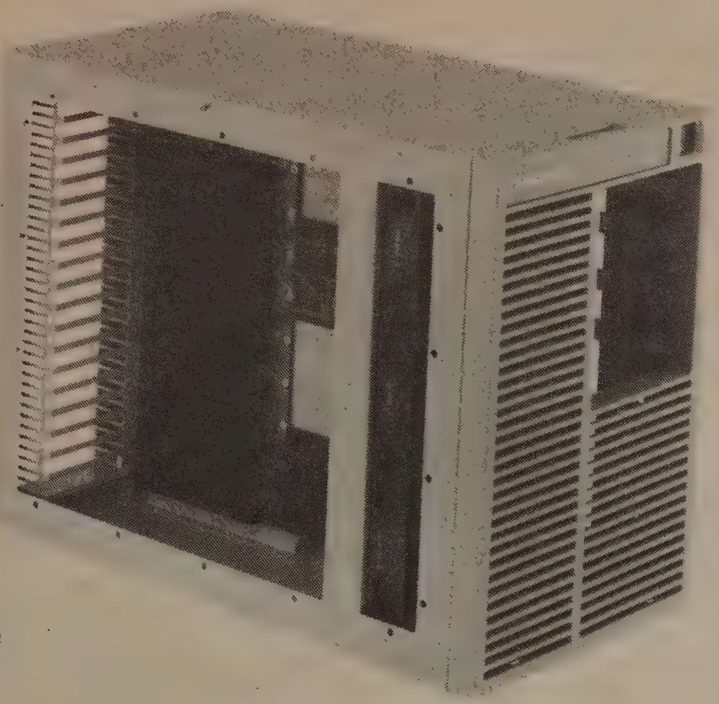

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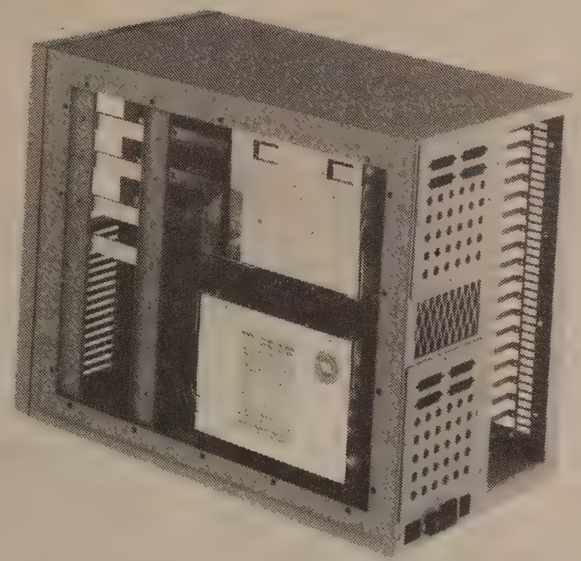

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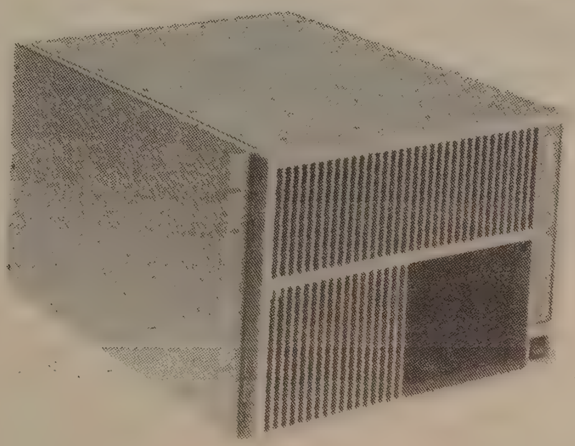

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REALIZABLE FANTASIES • BY JIM WARREN

Of Maps, Platforms & Mental Machinations

A recent news report said less than one American in ten can identify the U.S. on a world map. Further, all paper maps give a distorted view of Earth. For instance, a Mercator projection implies Greenland is larger than South America; Russia appears over 70% larger than it is. Some show Kansas as the center of the Earth; most put the northern Hemisphere at the top. (Aussies may be less than enchanted with such provincialism.)

With adequate databases and software, personal computers could display accurate views of Earth from any viewing position. (The same could be done for the known Universe, but Earthmap might have more local interest.) Geographers, teachers, astronomers and atlas publishers, take note.

(This proposal started with suggestions from Louis H. Smith, located "between San Francisco and Mt. Diablo.")

A global—or galactic—database could be created. Rotate and zoom software could use the database to generate views of the Earth, allowing eye position and magnification to be user-controlled. Control of pan and viewing direction add possibilities.

Rotation control simply analogs the old schoolroom globe—but the zoom and database contents can support unending innovation.

"Invisible" stuff—such as boundary lines, contours, population statistics, wheat production, weather data, etc.—could optionally appear as color, graphic, numeric or bar-graph displays. Earthmap could include all data found in a traditional atlas, which could be more effectively presented.

One thing however—one plea: Let us make the database design very robust and capable of expansion—for the potential applications are nearly endless.

Platform Projects

The Earthmap Project proposed herewith is an example of a "platform project." It is a project that can provide a platform from which numerous innovators can launch a multitude of software (and hardware) products and projects benefiting millions of users.

Examples of other past and current personal computing platforms include Gary Kildall's CP/M, Microsoft's MS-DOS, Autodesk's *AutoCAD*, H-P's LaserJet, Adobe's PostScript, Xerox PARC's Alto (source of much of the Mac design), the S-100 and IBM PC buses, etc.—just to name a few.

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Jim Warren founded the West Coast Computer Faire, the Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative, and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

Most of these systems could have been much better than they were, if they had at least widely solicited suggestions during their design. (This does not suggest design-by-committee, but does propose design outside of a vacuum.)

Unlike some of these platforms, however, Earthmap exemplifies a project in which numerous entrepreneurs can best benefit themselves and millions of users by cooperating in the database design, limiting their competition to the offering of specific data, products and applications that utilize that common, shared database design.

How!—An Ongoing Exclamation

To a large extent, "how" is the essence of this column—but how our minds address "how" is unclear.

How do people innovate? Whence springs the first seed of a new idea? The PBS television series *Connections* explores the issue—and makes the crucial point that innovation is almost never straight-line. The classic *Psychology of Computer Programming* addressed parts of it. Numerous other papers, books and seminars have addressed the issue—yet it remains mostly mystery.

As an aside, how harmful to the nation's innovation and related well-being is repressive aggression such as is exemplified in "look and feel" litigation?

To the extent that we can understand invention and innovation, and energize it—but probably not direct it, and certainly not regulate it or repress it—our society, our nation and our world is likely to be enhanced. Insights-to-share herewith solicited.

A Personal Problem-Solving Technique

For over two decades, I have used an effective problem-solving technique. It is a potent intellectual tool that has probably served me most of my life. But, I only consciously recognized it—and came to realize how dependable and productive it was—in 1964, while writing the mathematics thesis for my first Master's.

At the time, I was seeking to create something from (almost) nothing—a practice I later discovered was customary among computer innovators. In a half-year marathon, I sought to create the Natural numbers (1, 2, 3…), their operations and their properties from naught but the concepts of "set" and "element"—a philosophical exercise only a math muncher might enjoy.

On a graduate researcher's monastic schedule, I fell into a pattern of working from the time I awakened until the time I collapsed back into the nearby bed, trying to develop insights into the problem and prove their validity. There were often stone walls—I couldn't see where to go next or how to prove essential propositions. I would often crash into troubled sleep, depressed and frustrated from hours of furious wrestling with some intractable problem.

A global—or galactic—database could be created. Rotate and zoom software could use the database to generate views of the Earth, allowing eye position and magnification to be user-controlled.

Then, the next morning, I would awake—as the old joke goes—with solution in hand. I found that as I moved into that half-awake state preceding full consciousness, approaches to solving previously impossible problems would be self-evident. Upon reaching full wakefulness, I could flesh out the details.

After having this happen repeatedly, I finally realized it was a problem-solving tool. Since then, it has been a dependable intellectual technique that has been consistently effective. It has worked on technical, organizational, social, political and economic problems, just as it did on mathematical theories.

(As an aside, it is said that Thomas Edison rarely slept full nights, but would cat-nap in his lab, day and night.)

Can You Use This Problem-Solving Technique?

Perhaps this straightforward practice can also work for you:

1. Totally immerse yourself in a problem, from awakening to collapse. (Few if any really productive entrepreneurs or innovators work only 8-5. The God of Great Creativity seems to demand monastic devotion.)

2. Make sure you can record or scribble disorganized thoughts at the time you first become semiconscious. Don't wait to get up; do it in bed. Do it without lights if possible; extending that semicon-

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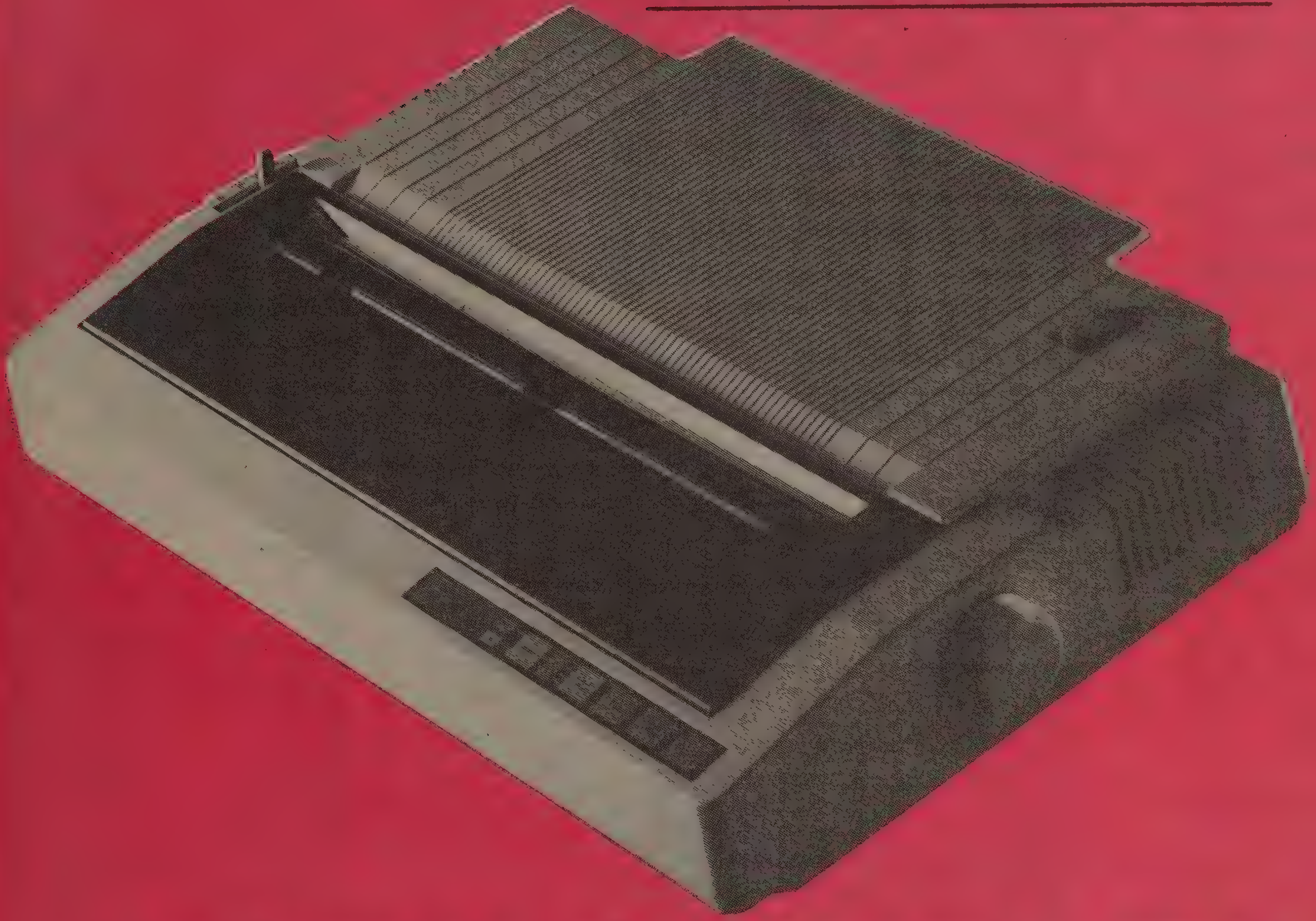

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If you manage creative staff, perhaps the most productive environment you can provide must include a quiet, private "office" with a bed, recorder, refrigerator and minimal scheduled work-hours.

scious state seems productive. In that state, make no attempt to organize, structure, discipline or "flesh out" your thoughts—just let them flow.

3. Then, when your mind insists on moving from semiconsciousness to full wakefulness, immediately stagger up and work on filling in the structure and detail.

If you give this a serious try—or if you've been doing it for years—please tell us the results.

Even Managers Might Do Something Useful

If you manage creative staff, perhaps the most productive environment you can provide to your designers and innovators must include a quiet, private "office" with a bed, recorder, refrigerator and minimal scheduled work-hours. (Good luck on getting this past control-clutching executives, myopic upper managers, work-rules union enforcers and regulation-laden labor bureaucrats—all of whom seem intent on destroying this nation's industrial innovation and creativity.)

Incite Inventors—Share Here

To share cranial crevice-fillers and innovative ideas yet to be implemented, send them to: Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. Please note: We receive more suggestions than we can respond to or print. Please know, however: They are appreciated; they do help.

Warren Speaks At Sonoma State Colloquium

Jim Warren is speaking in the campus colloquia program at Sonoma State University, noon, November 3rd. The program is open to the public. His talk is titled, "Realizable Computer Fantasies & Real Power for People."

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"OUR PRODUCTS ARE BEING WELL ACCEPTED—WE'RE DOING WHAT WE SAID WE WERE GOING TO DO."

"WE LOOKED AT A NUMBER OF IMPLEMENTATIONS FOR THE MICRO CHANNEL, AND FRANKLY DISCARDED THE ONE EISA'S CHOSEN."

"THE XT AND THE AT RAN THE SAME OPERATING SYSTEM. FRANKLY, I THINK THAT'S ONE OF THE THINGS THAT IBM REALLY DID RIGHT."

ENTRY SYSTEMS DIVISION PRESIDENT WILLIAM C. LOWE ON OS/2, STANDARDS AND THE BIG BLUE FUTURE

BY MARY EISENHART • PHOTOS: MICHAEL JAY

When IBM announced its PS/2 line last year, it was to distinctly mixed reactions. IBM's second-generation personal computer product had been eagerly awaited, as much for its implications for industry standards as for the machines themselves; when they arrived, incorporating a great deal of proprietary technology and designed for an operating system that hadn't been written yet (though they would also run applications in MS-DOS), more than one analyst predicted disaster.

The PS/2 line, and the OS/2 operating system, co-developed by IBM and Microsoft, addresses what IBM perceives as an increasing demand for sophisticated graphics-based interfaces and for multiuser, multitasking work environments in which "groupware" has become the latest buzzword. In order to achieve this, and to provide the increased power such environments require, IBM incorporated much of its own internally-developed technology into the products—dashing in the process the hopes of many vendors who'd done well with clones and compatibles of IBM's standards-based, open-architecture PC.

Slightly more than a year later, the PS/2 has shipped three million units, this without benefit of a fully-developed version of OS/2 or much in the way of OS/2-based applications. However, there's been plenty of attendant controversy, with a host of hardware and software vendors offering a plethora of reasons to resist the new offerings from IBM. Faced with a new operating system with higher memory requirements and no existing applications, and burdened with a huge investment in enhancement cards for their existing DOS-based machines, many true-Blue sites took a new look at AT clones running XENIX. Given no clear upgrade path from their open-architecture and card-stuffed PCs, XTs and ATs to the new technology, users rebelled at the thought of investing in yet another incompatible, destined-for-obsolescence line.

And hardware vendors, tired of waiting for IBM to set a new standard after it announced the end of the AT line, evolved their own enhanced AT standard for 286 and 386-based machines. When IBM issued its policies on licensing its technology (notably the architecture of the proprietary Micro Channel bus, featured on the higher-end PS/2s), it included a requirement that a company seeking a license of current technology must pay IBM a royalty for the use of its technology the company used in any PC/XT/AT clones it may have sold along the way. Many clone and compatible vendors, Compaq, Hewlett-Packard and Tandy among them, found this unacceptable and formed a strategic alliance called EISA (Extended Industry System Architecture) to design a new bus that would allow customers to use their existing AT-based enhancement cards in newer machines.

At the software level, meanwhile, OS/2 and its multitasking interface the Presentation Manager, still at the development stage, faced stiff competition and a barrage of epithets from purveyors of alternate window-based multitasking operating environments. Apple announced its own version of UNIX, A/UX, which is also still largely in the development stage but promises an eventual merge of the Mac's ease of use with the power of UNIX. Meanwhile Sun and AT&T announced plans to merge their respective versions of UNIX in a windowing environment, Open Look—prompting other vendors, IBM among them, to form the Open Systems Foundation to create an alternative version of UNIX, with IBM's own AIX dialect as the basis for development. (IBM also startled the industry recently by announcing that it had licensed the technology of the NeXT workstation for use in future products.)

"...TECHNOLOGY WE SEE ON THE DESKTOP ARGUES THAT WE PROVIDE AN ARCHITECTURE BASE AND A DESIGN ENVIRONMENT THAT IS MUCH MORE POWERFUL THAN THE ORIGINAL PC WAS."

While all this was going on, IBM also announced that henceforth its overall strategy would be based on what it called Standard Application Architecture—the practical implication of which is that micro, midrange and mainframe computers would share the same interface, making it easy for customers to move their existing records and applications to bigger machines as their needs changed, making it all the easier for them to stay comfortably ensconced in a universe of IBM solutions.

"WE'RE PROVIDING A MUCH MORE POWERFUL PLATFORM OF HARDWARE AND SOFTWARE FOR OUR CUSTOMERS."

◆

When IBM shipped its first PC in 1981, nobody, least of all IBM, knew what to expect. The success of the Apple II and of various other early machines led Big Blue to suspect that there was a good, if limited, market of hobbyists and programmers who might look with favor on a Personal Computer.

As it turned out, the PC enjoyed a success which astonished its creators. Computer Faire founder Jim Warren recalls a Faire in the early '80s, where the late Don Estridge, who headed the PC design team and later the Entry Systems Division which was formed around it, assured the crowd that IBM was very happy at the PC's amazing sales, and plaintively asked them to come explain to IBM what they were using the machines for.

The PC represented a considerable departure from IBM's traditional approach to life. Not for IBM were the Jobsian slogans about the journey being the reward and the computer being insanely great; from the days of typewriters, IBM provided sober, solid solutions for its business customers, who tended to buy or lease IBM hardware from IBM's direct sales force, who made sure its clients had IBM software to address their business needs. The closed and proprietary nature of IBM's technology was one of the leading forces which originally led Homebrew Computer Club members to want—and build—computers of their *own* and, for that matter, which led some programmers at AT&T to create a hardware-independent operating system which became known as UNIX.

In order to take advantage of a perceived window of opportunity, the PC was brought to market with an unprecedented degree of collaboration with non-IBM vendors and a large amount of off-the-shelf technology. While the strategy was successful from a standpoint of assuring the machine's rapid acceptance, it also made it very easy for outside vendors to clone the PC, not an unmitigated blessing from IBM's standpoint, and a problem it apparently sought to avoid by keeping most of the PS/2's technology proprietary.

◆

Entry Systems Division president William C. Lowe has been at the center of most of this controversy

IBM TALKS TOUGH

since the PS/2 announcement. (Entry Systems includes the PS/2 line and, among other machines, the PC RT, a technical workstation running AIX.) Himself a veteran of the PC design team, he's often been characterized as embattled in the war of words (and bottom line) around OS/2.

Speaking recently at the Dataquest Personal Computer Industry Conference, "Visions of the '90s," Lowe was anything but defensive. The conference itself had been something of an OS/2 love-feast, with software vendors enthusiastically singing its praises and analysts noting that even game publishers were moving their wares to the new system. He sketched a rosy future of IBM's role in the workplace of the future, and answered not-always-friendly audience questions confidently. (Dealing with the ever-popular question of what PC/XT/AT users were supposed to do with their substantial investment in non-Micro Channel enhancement cards, printers, etc. as the new technology became standard, Lowe seemed to consider it something of a non-issue, observing that, after all, when you sold your old machine, you also sold the cards in it. "This," noted one observer testily, "presupposes that you're going to sell your old machine...")

The same spirit carried over into our interview—that IBM has a clear sense of direction, knows exactly what it's doing, and is being vindicated in the marketplace. As for the occasional road hazard like Open Look and EISA—well, that's just another indication that IBM's doing something right.

Going back to what's nearly ancient history at this point, the Entry Systems Division was obviously created to address certain needs and to deal with things at a level on which IBM had not previously dealt with them. What was the thinking behind creating the Entry Systems Division, and the PC?

Well, back in 1978, we had a small group in Boca Raton who were focused on microprocessor technology, and determining when and if it made sense for IBM to get into the business that became the PC business.

At that time, that business consisted mainly of Apple and a whole bunch of CP/M guys?

That's right. But after a lot of work and a lot of analysis, a proposal was put together in 1980 which was aimed at building a personal productivity machine. We thought programming professionals and hobbyists were the real target. But at that time, applications had become available, the technology to support the delivery of a reasonable system was there, and the distribution channels began to emerge that would lead you to believe that you could put out a successful product—with modest expectations.

The distribution for the PC was through the retail channel, rather than the direct sales channel IBM had used up to that point?

Through retail. That's right. And so we put together a proposal back then, and put together a very small team—it was certainly not a division at that point—which attempted to build, on a fast schedule, a relatively low investment project—to build what became the PC in 1981.

Now the acceptance of that product and its importance in business far exceeded our expectations. The division, I believe, was formed in July of 1983, and that, frankly, was just a recognition that the PC business had grown, the revenues had grown, the number of employees involved in this activity had grown, and that the PC had become a key part of IBM's large account strategies.

In what way?

Well, in the way that many of our large customers were using multiple PCs, they were replacing mainframe-interactive displays with them to take advantage of the standalone power that they had, in addition to the communications capability for interconnection with intermediate and large processors.

So at that time they were essentially using the machines as smart terminals?

Well, what they did was they really had the option. I think that the early machines that were used in that way had a hot key capability that allowed you to go back and forth between MFI and intelligent workstation mode.

In the course of 1983 and '84, our business grew significantly, and in 1985 we really began to restructure our personal computer business in a way that was similar to the way we managed our other large developing and manufacturing activities. And so today the Entry Systems Division is very similar to other divisions within IBM. We have a very large revenue flow and a large responsibility in terms of providing IBM's overall product solutions.

When the PC, and its successors the XT and the AT, came out, they all ran an operating system which was done by an outside developer, Microsoft, and they all had an open architecture so they could use third-party boards and peripherals. This is something that IBM had not historically been in the habit of doing—is that correct?

Well, I can only say that when we looked at this new business, our judgment was that having open-architected definitions for the hardware, to allow other developers to complement our product line, with feature cards for instance, and having the applications, a broad range of applications, available for our customers who bought our systems—we felt it was important to the acceptance of our product line.

And so—you know, you don't often get an opportunity to start with a blank sheet of paper when you're designing a new product line, deciding what you're doing. With the PC when it was first introduced, that's really where we began. So we felt that to gain acceptance of this new form of computing on the desktop, having the largest number of applications, the largest number of I/O cards, was important to the acceptance of this new product family.

Then you mention that the XT and the AT ran the same operating system. Frankly, I think that's one of the things that IBM really did right, that we've learned from our other businesses, that some competitors in this time frame sort of switched back and forth in terms of what operating system they ran and what end-user interface they provided. We did it in a consistent way.

With upward and downward compatibility, and a clear upgrade path and all that.

Right.

Were you anticipating that clones would proliferate at the rate they did?

Let me say in retrospect that I wish we had introduced our second generation family about a year earlier than we did (smiles), but I think that clearly the requirements and the use of these machines and their application had changed significantly by the time we got to determining what we were going to do for our second generation of products. We wanted to provide a family that was consistent with where we'd been, but that also provided a base that allowed our customers to take advantage of the technology for some time to come, and to meet application requirements we see coming in the future.

Clearly as you look out in front of us today, the number of systems we anticipate being sold over the next three to five years, new applications that are used—powerful technology that we see on the desktop argues that we provide an architecture base and a design environment that is much more powerful than the original PC was.

When your second generation, the PS/2, came along, it was a definite leap on a number of fronts. It had a much stronger graphic interface and it had the Micro Channel Architecture, which was proprietary, and...

From our point of view, we had a lot of new leadership technology. We used the advanced ASDI capability within IBM, new graphics, as you mentioned, IBM memory, IBM logic capability. We went to the 3 1/2 inch diskettes because we felt they provided better reliability and smaller footprint capability on the machines. We provided the Micro Channel. We and Microsoft now develop jointly an OS/2 operating system, which provided expanded memory addressing and multitasking capability. So we're providing, just in general, a much more powerful platform of hardware and software, which, again, we think is important for our customers.

We now have a broad range of customers. It's not the programmer at home, it's not the hobbyist, it's education, government, business of all sizes, and very robust technology and new applications coming down the pipeline.

Have you seen any pattern in who's buying PS/2s and what they're using them for?

We do a lot of studies in regard to what's happening with our product line, who's buying them. If you look at our product line across the board, you'll find the Model 25, for instance, catching on very, very well in education. The volumes through the third quarter of this year are very, very strong on the Model 25.

In general, if you look at large accounts, they buy products from across our product line—Model 30s, 50s, 60s, 70 and 80s. In small business, they are primarily buying the more capable machines, the more powerful machines; it would lead you to believe that in small business in many places they're buying products and using them as LAN servers, putting several workstations on them.

The other thing that's happening is that if you look at personal use of the machines and use of computers at

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home, for business at home and for other uses, you see that that is growing tremendously, and that in general the home is buying more capable machines as well, and higher-price machines. They seem to have gone through a period of buying essentially toys, not real machines, and now the demand is for real capability.

So I see people buying our products across the product line. Large accounts, intermediate size accounts, are buying the full range. Small businesses seem to be buying more capable products, and at the home and in education in general they're buying the 25, 30 and 50 model range of our product line.

What was the thinking in making a fairly radical split between the generally clear migration path the PC had and the PS/2?

Well, we felt that we provided a reasonable transition for our customers, in light of the fact that we wanted to put in place a technology base that they could grow with through time. The real focus on the design of the product was to allow our customers to take advantage of technology, not just in 1987 and 1988, but through the early 90s as well. To allow us the flexibility to meet future application requirements by doing things well—like multitasking with the software, multiuser support; supporting multiple communications environments; providing the capability to manage large amounts of data for applications like image, artificial intelligence, which we see coming to the desktop and being affordable as we look into the early '90s timeframe.

We wanted to provide consistency—you can run your DOS apps, we put most of the function associated with the I/O devices that were plugged into the first generation of machines onto the planar boards of the new machines, like the graphics adapter, the printer adapter, the memory expansion, which is where most of the option cards were in the first generation—they're now built in.

And so what we wanted to do is provide a good transition, but at the same time make sure that when the customers began to build and buy from our new product line, that their investment was going to be a worthwhile one for the next three to five to seven years.

How does the PS/2 line fit strategically with the next step up, the AS/400 line?

Well, in early 1987 we announced our direction of System Application Architecture. What that means to us within IBM is that we're going to support on the AS/400 [midrange], the 370 [mainframe] and the PS/2, consistent end user interfaces, application interfaces. We're going to provide consistent support from a communications point of view and a database management point of view, so that people who move from one of our products to another will see similar interfaces, and we can move the work and the application in overall IBM solutions, to where a customer wants that work to reside. They either want the data to be out, bound in offices, or they want it centrally held. They want the applications to be either at the workstations at a departmental systems or run locally, depending upon the security requirements, where it's most effective for them to do it, and where their data resides.

So our view is that we will have some overlap in capability from one product to the next, but that we'll provide a full range of flexible products for our customers to select from and still be able to get their job done in a consistent way.

Most companies who are not IBM are basing a lot of their future strategies on the probable existence of multivendor environments that their products will have to fit into. What's IBM's view of all this? Historically, you've had all-IBM sites, and this is obviously delightful, but...

Well, a couple of things. Number one, when there was a lot of question in the industry we made it clear that we would license the intellectual property that was developed and invested in our PS/2 product line, just as we do the broad range of intellectual property from IBM. Our patent licensing policy is mainly driven to allow us freedom of action, to be able to essentially have cross-licensing agreements with other companies who make investments. And we do make available to those competitors who don't make a significant investment the opportunity to gain access to our intellectual property. And we think the prices we've set for that are in line with what other major manufacturers charge.

From a software point of view, you know that we've focused on providing what we think is a superior UNIX product, AIX, and we're going to support that across the product line from the high end of the PS/2 to our RISC-based workstations to the 370, and of course we're providing all the interconnectivity that you would associate with UNIX, supporting the formal industry standards and the de facto standards with our AIX software. AIX was chosen as a base for the Open Software Foundation's work as well.

We're going to provide the same database capabilities, the same communications standards on AIX as we have on SAA. So we think that we're providing a full range of capability to support the inter-manufacturer environment—if that's a word (laughs)—and to support the full range of our customers' needs. We've got SAA, which ties together IBM's architectures in a compatible way. We've identified the standards that we're going to use, and other manufacturers are supporting those standards as well, which allows interoperability and intercommunication between their products and SAA. We are committed to providing a superior communications database relationship between SAA and AIX, and in AIX we're providing all of the industry standard interconnections in the UNIX world. So we're attempting to support our customers' total needs with a combination of those directions.

You recently announced the Model 30 286, which does not have the Micro Channel bus but is compatible with the PC-AT line.

When we introduced the PS/2 family, we had three models which were Micro Channel equipped and two models which were not. We had the 25 and 30 on the non-Micro Channel side, and the 50, 60 and 80 with the Micro Channel. We told our customers that we were going to improve price, performance and function at every price point as frequently as we could in line with the improved cost of technology that we anticipated was coming.

In 1988 we've introduced five new Micro Channel models so far, Model 50s and the Model 70, which puts the 386 on the desktop. In September we introduced the 30 286, which puts the 286 microprocessor in a Model 30. Very aggressive price-performance point. If we could have afforded the Micro Channel at that price point, we would've done it. I think our customers should probably expect that we'll put the 286 in the Model 25 as well at some point. And then at the point when technology costs will allow it, we'll have the Micro Channel at those price points.

Our strategy is Micro Channel. But again we're going to try to meet the full range of our customers' needs, and again as frequently as possible, improve the price-performance at every price point.

How do you plan to deal with the EISA guys?

Well, I'll tell you. Dealing with them—I don't know if that's the right question. I think the announcement of this EISA direction is a recognition on the part of our competitors that we were right in providing Micro Channel. You know, last year I think they said what you'd expect them to say when they didn't have an extended architecture—they said you don't need one. Now they're saying well, we need one, and by the way, we're not going to ship machines that are capable until the end of '89, and by the way, to take advantage of that bus you're going to have to design unique cards, just as IBM had to work with the industry to get unique cards to take advantage of the Micro Channel.

I think it's an opportunity for us, therefore, because we're delivering now and have been for a year and a half, and they've got a promise for the future.

The other thing I would say is that we have designed the AT bus. We looked at a number of implementations for the Micro Channel, and frankly discarded the one that they have chosen. Primarily because in order to plug in the AT cards, what you do is you punish yourself with some of the clocking requirements of the old AT, and we've provided an asynchronous bus structure, which gives you a lot more flexibility for higher performance through time.

In addition, as I mentioned earlier, we built the capability of I/O cards onto our planar boards. We've got over 500 cards available from the industry to support unique requirements of our customers to complement our new machines, and while they're making the argument that they're protecting cards for the future, I think it's a spurious argument. I think it was a 1987 argument, not a 1989 argument.

I really think, therefore, in summary, that these people have recognized the decision that we made a year ago—we're providing products today that protect our customers' investments, and we have a real opportunity that we need to go out and take advantage of. Because we can deliver products now, and have been for the last year and a half. And they have developed some sort of promise for the future.

At this point you have a fairly significant commitment to UNIX in the form of AIX and also to OS/2 as the platform for the PS/2. Where do you see these two operating systems with

continued on page 200

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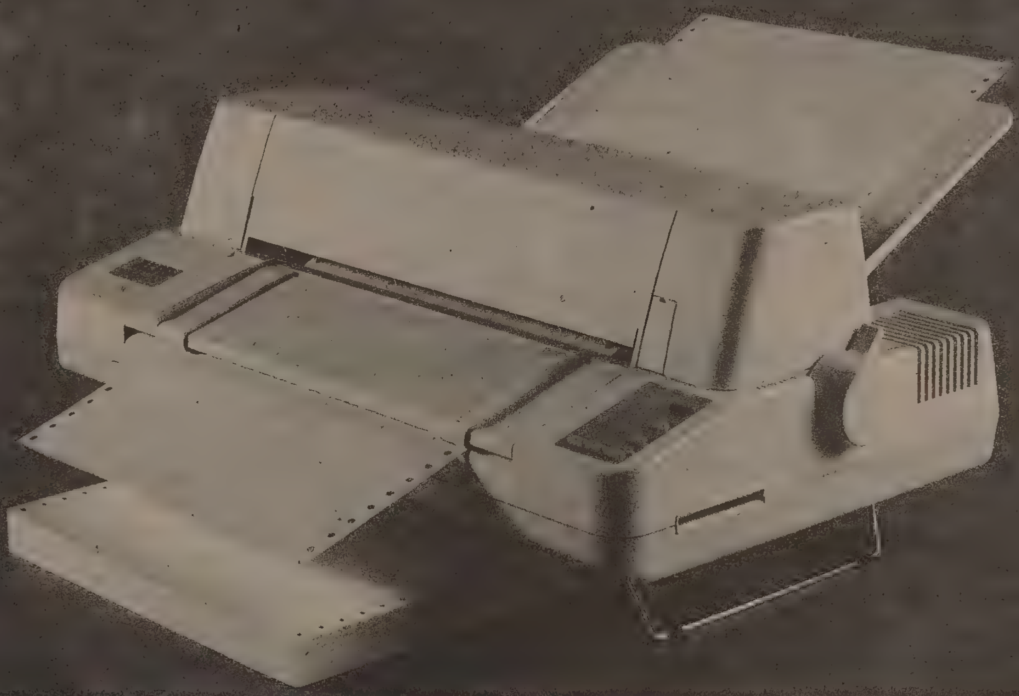

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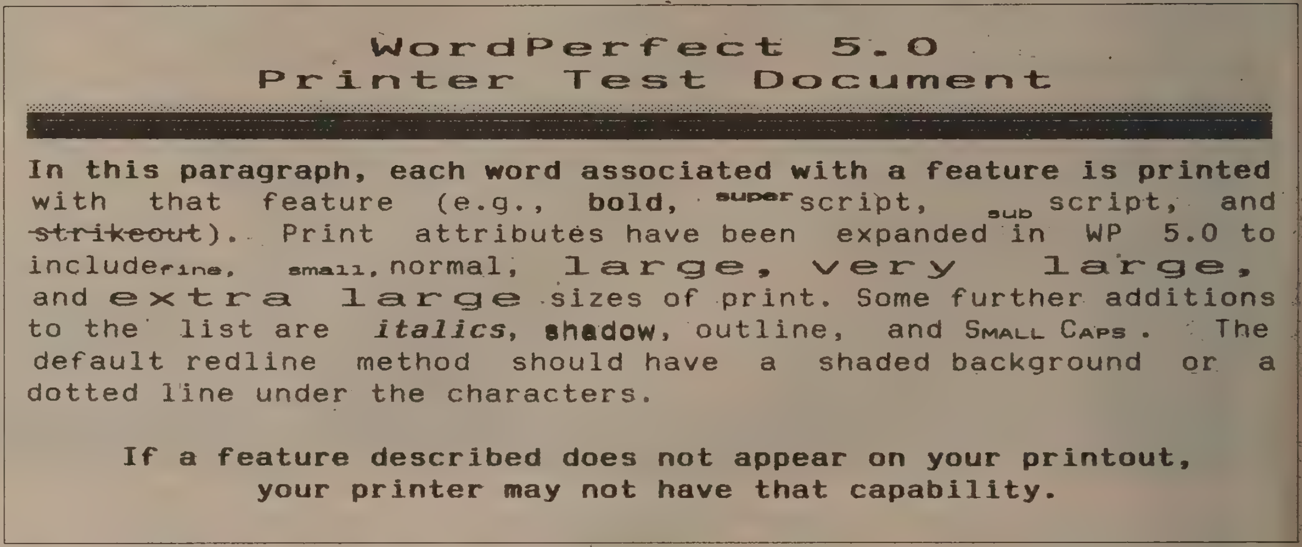
Real World Adventures With WordPerfect 5.0

Or, Why You Should Get An Update

By Lenny Bailes



WordPerfect 5.0
Printer Test Document

In this paragraph, each word associated with a feature is printed with that feature (e.g., **bold**, superscript, subscript, and ~~strikeout~~). Print attributes have been expanded in WP 5.0 to include fine, small, normal, large, very large, and extra large sizes of print. Some further additions to the list are *italics*, shadow, outline, and SMALL CAPS. The default redline method should have a shaded background or a dotted line under the characters.

If a feature described does not appear on your printout, your printer may not have that capability.

Page 1 of the WordPerfect printer text, printed with Metatext, Cubic font, on LX-80.

One aspect of the desktop publishing boom which has brightened my life is the advent of the computer laser parlor. Along with other part-time writer/word processors, I am now able to leave my suits and ties in the closet and work at home. I can take my disks with me into the San Francisco financial district and for $6 to $10 an hour and 30 cents a page I can print to my heart's content on $10,000 equipment.

The first time I had a *WordPerfect* 5.0 document mess up on an Apple LaserWriter I shrugged it off. So the one-line headings had occasionally wrapped to two lines; maybe I'd made a mistake. It was easy to reformat the document, and I was in a hurry.

The second time I had a *WP* 5.0 job to print I was careful. I checked all of the headings and page breaks. I made a copy of the LaserWriter driver I'd used at home and installed it on the computer at the laser parlor. To my surprise all of my one-line headings were again split over two lines. Fifteen point section headings were selected as 13 point. The text broke in new, different places, and the tab settings were incorrect.

This time, instead of changing the document, I went home and retrieved my entire copy of *WordPerfect*. I installed it on the computer at the copy store. Finally, I was able to get my document out without anomalies occurring in the page format. The release date of the *WordPerfect* software on the hard disk at the laser parlor was 5-5-88. My copy was dated 9-23-88, and that made all the difference.

The WordPerfect Corporation has always quietly updated versions of their product without making announcements. In *WordPerfect* 4.2 the updates never greatly affected the compatibility of documents produced by subsequent versions. However, *WordPerfect* 5.0 is sufficiently more complex than its predecessors that the bug fixes in new versions can really alter the appearance of a printed document.

Back in May, the WordPerfect public relations people stirred up a huge demand for the new program. The sales people went to the West Coast Computer Faire and out to user groups with impressive roadshow demonstrations. *WordPerfect* 5.0 was a breakthrough product. It offered a new level of document production. All of the 4.2 word processing power would be combined with graphics and desktop publishing capabilities. PostScript was no longer the private preserve of Macintosh users. HP Laserjet users would no longer have to struggle with external font downloading programs. The full potential of laser publishing was finally to be attained.

WordPerfect yielded to pressure from consumers and released a product which was barely out of beta testing. Although the new release was clearly the most feature-laden word processor ever released for an MS-DOS computer, it turned out to have many irritating small bugs. Some of the new features were inadequately documented. How could you preserve the structure of tables of authorities and footnotes when you transferred from 4.2 and back again? How did the printer drivers select fonts? Why did the document default settings sometimes change inexplicably and ignore the system default settings?

Responding to demands from users, the company quickly discovered that it had to increase its technical support staff. Many printer drivers were rewritten (some popular printers had also been omitted from the new program's configuration choices). The printer drivers in *WordPerfect* 5.0 attempted feats unequalled by other word processors. They allowed you to jump to any spot on a page, enter data and jump back to the previous cursor position. You could change the typesize and format of individual words and characters to small, large or extra large. The program would automatically select a font and calculate spacing for optimum appearance. Multiple typefaces and sizes were accommodated on a single line without your having to reset margins or tabs. If you switched to a different printer, the program would automatically match the fonts in the new printer for best fit with the fonts you selected on the old one.

This amazing innovation in programming was not accomplished without minor aggravations for the user. I experienced one at the laser parlor when I was in a hurry.

To date there have been three releases of *WordPerfect* 5.0, dated 5-5, 7-11 and 9-23-88. If you own the May release, you should contact WordPerfect Technical Support and request an update. The first release was incompatible with the add-on Bitstream Fontware. The file formats used by the printer drivers were

In WordPerfect 4.2, updates never greatly affected the compatibility of documents produced by subsequent versions. However, WordPerfect 5.0 is sufficiently more complex than its predecessors that the bug fixes in new versions can really alter the appearance of a printed document.

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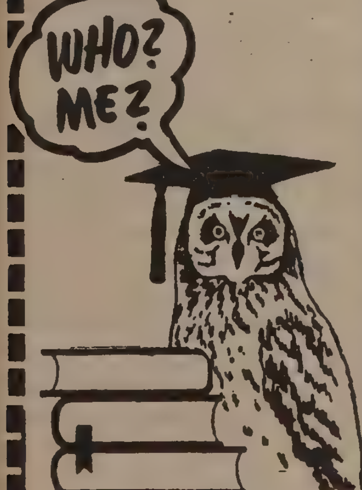

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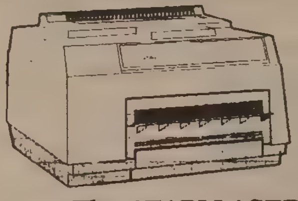

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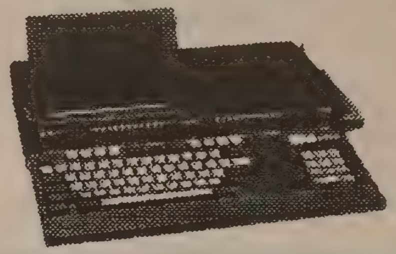

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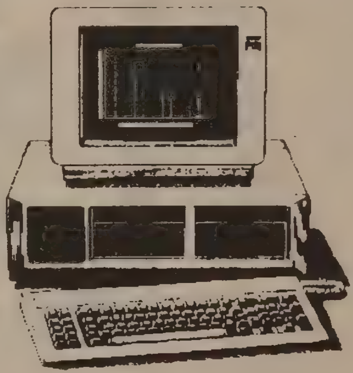

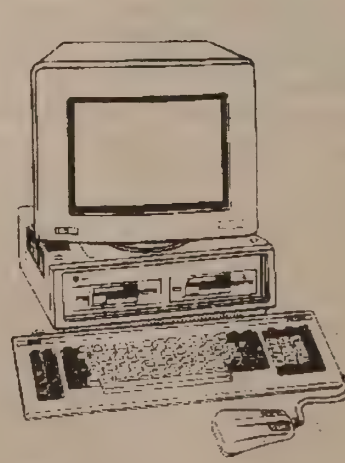

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completely revised in the July release. This is why my font selections for the Apple LaserWriter were misinterpreted by the May version, even though I brought my updated Apple driver with me. The 7-11 version is capable of reading printer drivers from any version. I'd recommend you make a copy of your printer file (.PRS), if you're including multiple fonts and sizes in your document. If you intend to print your document at another computer, you can bring the driver with you.

The July release also fixed several non-printer related problems. Block protect and orphan control were coordinated, a 4.2 spell checking option was restored, and problems with nonstandard video displays were resolved. The September update (most recent as of this writing) fixed a problem with line drawing on HPLaserjets, and it enhanced setup defaults to include printer options. The September update also revises PTR, the printer editing program, making it easier to use.

Despite the improvements made in the two upgrades, *WordPerfect* still has features which are inaccessible to users without the purchase of third-party support packages. If you own a Laserjet, you will only be able to install "official" Hewlett-Packard or Bitstream soft fonts. You won't easily be able to install the hundreds of readily available soft fonts in the HP format.

The printer editor has been an undocumented *WP5* feature for the first five months of the product's release. The company has only recently produced a reference manual for this program, which it is currently distributing to registered 5.0 users for an additional $15.

Still A Few Unresolved Problems

Problems I'm aware of that are still unresolved in the latest *WordPerfect* update include the following:

1. Line numbering is not properly displayed in preview mode. Choose continuous line numbering and the display shows each page beginning with line number 1. (The line numbers do print properly.)

2. Blank lines between paragraphs are not suppressed if pagination places the paragraph at the beginning of a page.

3. If a page number is suppressed, the bottom margin of that page jumps to where the page number would have been printed.

4. Footnotes and headers respond differently to margin commands. Footnotes are only affected by the initial margin settings of the document, but headers are affected by subsequent margin changes.

5. The program behaves sluggishly when handling documents larger than 40 pages, sometimes displaying "out of memory" messages and failing to execute macros.

6. Conversion of 4.2 documents to 5.0 and 5.0 to 4.2 is not 100% reliable. In addition to the documented inability of each version to handle some embedded codes of the other, unwanted file header information is occasionally transferred in going from one system to another.

WordPerfect is definitely responding to requests from customers to fine-tune their product. The people on the tech support lines continue to uphold the company's reputation for courteous, intelligent communication, but many of them are learning the program along with the users.

Ace Bandages

1. Apple LaserWriter

a) If you're going to use someone else's system, check the release date of their *WordPerfect* and bring your printer driver with you. If the other system has the May release, bring your entire upgrade. WordPerfect Corporation permits sharing of upgrades among registered 5.0 owners.

If you are still having trouble getting the font selections to correspond with yours, check the default initial font in the printer driver with <Shift F7, S, 3 (Edit)>. If the initial font doesn't match, reselect the desired font and clear the document editing screen. Type one character on the screen and append your initial document with <Shift F10>. Now backspace over the first character you typed in. This creates a document which will be saved with your new initial defaults no matter what was originally saved with the document.

b) You may want to print a 25-line-per-page legal document on a LaserWriter at six lines per inch. You will be dismayed to find that the 25-line pages take up 26 lines each on standard deposition paper. This is because the default line height for Courier-10 Legal in the LaserWriter is set at .175." This does not correspond to six lines per inch. Reset the line height using <Shift F8, 1, 5> to a fixed distance of .167" per line. (One inch divided by six lines equals .167 inches per line). Set your top and bottom margins to correspond to where the numbers on the pleading paper begin and end.

2. HPLaserjet Family

If you want to use non-Hewlett-Packard, non-Bitstream soft fonts, you can purchase a font managing package called *Pop 'n' Print* from SWFTE, or you can roll your own printer drivers. Using the PTR program to substitute your own soft fonts for the "official"

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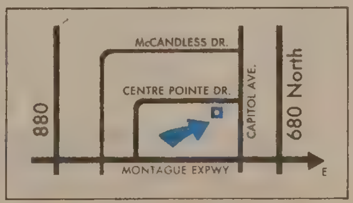

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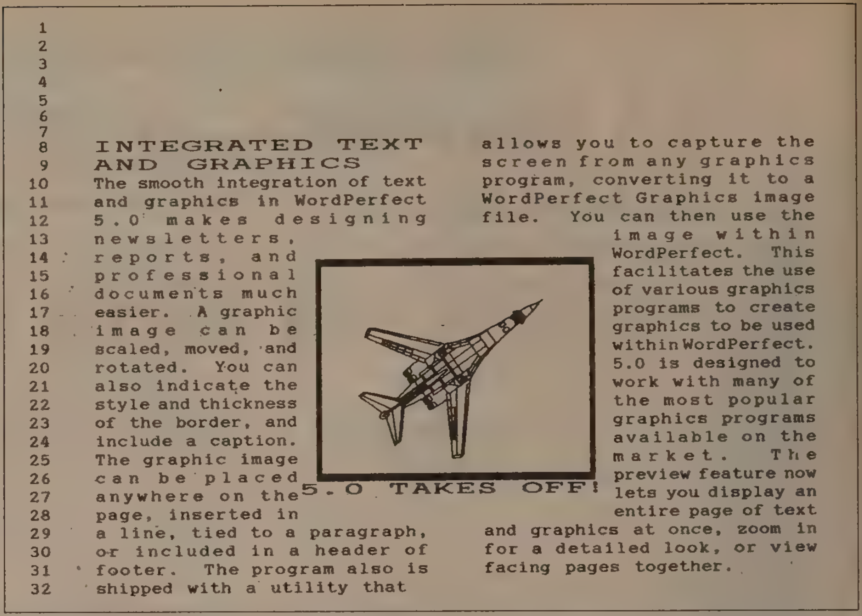

INTEGRATED TEXT AND GRAPHICS

The smooth integration of text and graphics in WordPerfect 5.0 makes designing newsletters, reports, and professional documents much easier. A graphic image can be scaled, moved, and rotated. You can also indicate the style and thickness of the border, and include a caption. The graphic image can be placed anywhere on the page, inserted in a line, tied to a paragraph, or included in a header of footer. The program also is shipped with a utility that allows you to capture the screen from any graphics program, converting it to a WordPerfect Graphics image file. You can then use the image within WordPerfect. This facilitates the use of various graphics programs to create graphics to be used within WordPerfect. 5.0 is designed to work with many of the most popular graphics programs available on the market. The preview feature now lets you display an entire page of text and graphics at once, zoom in for a detailed look, or view facing pages together.

WordPerfect printer text with Metatext and proportional-spaced FX drivers.

ones is tricky, but not impossible. I was aided in performing this trick by a document called "FONTQD.TXT". This was originally posted in the WordPerfect SIG on CompuServe, but is now making the rounds on public BBS systems. "PTR-REF.WP" is another helpful document from CompuServe, a compilation of all of the help screens from the printer editor indexed and made into a standalone document.

Basically, to modify the HPLaserjet printer driver you have to get into the typeface definition tables and spot an existing soft font installation with similar point size to your font. You substitute the name and font ID code of your font in the definition. To assist you, if you have a modem, you'll also want to download some widely circulated HP support files from your nearest BBS. ANSFONT and FONTINFO are utilities which read any HP soft font and display all relevant information needed by *WordPerfect*'s printer driver. (These are also sold by some shareware vendors at swapmeets.) ESCHPLJ 1.ARC is a list of all the printer command sequences utilized by the Laserjet family to download and select fonts. It isn't absolutely necessary to know what these codes mean, as you can just copy most of the information by rote from the *WordPerfect* printer driver.

If you don't have that much hacker blood in you, you can install fonts with the commercial SWFTE utility or rent time on an Apple LaserWriter (where all of the fonts you need are built into the printer).

3. Epson Dot Matrix

Believe it or not, you can print high resolution, 200-dot-per-inch fonts on an EPSON FX with *WordPerfect* 5.0—including the graphics. A company called Image Computer Systems makes a utility called Metatext which transparently installs up to 15 letter quality fonts in any EPSON compatible 9-pin printer. Chris McVickers, Metatext's creator, is currently working on drivers for EPSON 24-pin printers. Readers with long memories may recall that I reviewed this printer utility in *MicroTimes* back in September 1987. The latest version is fully compatible with *WordPerfect* 5.0.

If you have an EPSON LX-80 and have discovered problems with the LX-800 driver initially supplied with *WordPerfect*, you can request a new LX-80 driver from the company or modify the LX-800 driver. The two are very nearly compatible, but the LX-800 uses a wider ribbon cartridge. If you enter the printer program, load the LX-800 driver and select "Miscellaneous Printer Commands" you will see a setting for "Print Head Bias." Just change this from "0" for the LX-800 to "240" for the LX-80.

An EPSON LX-80 may also use the EPSON FX-80 driver and gain the capability to do microspaced justification. It's slow, but pretty. If you do this, you'll have to use the front panel select switches to get a near letter quality printout.

It should be possible, by the way, to modify the EPSON LQ-800 and LQ-850 drivers to support downloadable Epson wire-frame fonts. Watch this space for further developments. □

RESOURCES

WordPerfect 5.0 from WordPerfect Corporation, 1555 N. Technology Way, Orem, UT 84057. (801) 225-5000.

Pop 'N Print from SWFTE, International, Ltd., P.O. Box 5773, Wilmington, Delaware 19808 (800) 237-9383 (302) 658-1123

Metatext from Image Computer Systems, P.O. Box 647, Avon, Connecticut 06001, (203) 678-8771.

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Why the Fujitsu 24-pin dot-matrix printer is rated one of the best buys in its class.

If you're looking for a full-featured 24-wire dot-matrix printer at a surprisingly affordable price, check-out the Fujitsu DL3400 printer. In a comparison test of 37 dot-matrix printers by BYTE magazine, it was rated as being one of your best choices. Here's why:

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Choose between the razor sharp 72 cps letter-quality mode or the fast 288 cps draft mode to fit your application. Additional font cards allow you to choose from nine different letter quality fonts. The DL3400 received top ratings in both text and graphics printing.

Superb Paper Handling

Load continuous forms automatically or "park" forms to insert single sheets at anytime. The rear feed tractors move the paper smoothly, greatly reducing the possibility of jamming.

Quiet Operation

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Incredible Reliability

The DL3400 is rated at an industry leading 8,000 hours MTBF for years of reliable operation.

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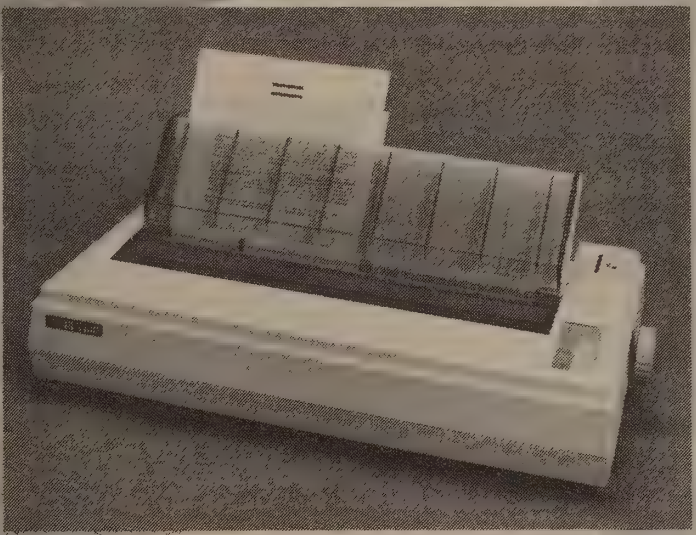

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* Information from April 1988 issue of BYTE

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ROMMEL: Battles For North Africa

By: *Roger Keating, Ian Trout, Mark Holman, Phil Niven and David Freer*
Published by: *SSG (1988)*
For: *Apple II (64K)*
List Price: *$40*
Reviewed by: *Mike Markowitz*

The War in the Desert has a special appeal for those inclined to romanticize the Third Reich. There were hardly any civilians in the combat zones, so the Nazi troops had little occasion to commit atrocities. Thanks to the extraordinary incompetence of the British in strategy, tactics and logistics the campaigns dragged on for years, giving Field Marshall Irwin Rommel a legendary reputation for chivalry and military genius.

The British, for example, transported motor fuel to the front in flimsy tin cans, and managed to lose vast amounts to puncture and evaporation. The Germans used a rugged, well-designed container, which we still recognize as the "Jerry can." When the Germans discovered that their 88 mm antiaircraft gun made a devastating anti-tank weapon, they used it in that role. The British, with an equally good artillery piece, the "25-pounder," never quite got the knack of shooting it at tanks. That wasn't in the book. You get the picture...

Strategic Studies Group has packaged eight battles from this period in a new computer game. Rommel's sad blue eyes look out from the cover, with the thousand-meter stare that vast, empty spaces demand.

The game is the fourth (and probably last) title in the Battlefront series, still the best microcomputer wargame system for operational-level simulation you can buy. Lovingly hand-coded in machine-language, the program squeezes a lot of history onto two sides of a disk. You might imagine that desert is just desert, but there are twenty-three distinct terrain types, and the battles represent a wide variety of tactical problems.

Syria (June 9 – 21, 1941): To prevent the Germans from gaining a foothold in Vichy-occupied Syria, the British launched a surprise invasion from Palestine. The campaign is famous mainly as the occasion when Moishe Dayan, serving as a scout for the British, lost the sight of one eye. The map includes the mountains between Beirut, Damascus and the Golan Heights.

Sidi Rezegh (November 21 – 23, 1941): Advancing to relieve the besieged fortress of Tobruk, the British 7th Armoured Division ("Desert Rats") are halted and chewed up by the Afrika Korps.

Malta (March 23 – 30, 1942): This heroic little island in the middle of the Mediterranean was a constant threat to Rommel's supply line. The German failure to capture it was one of their biggest mistakes of the war. This hypothetical scenario, based on an actual Axis plan, commits 30,000 airborne troops against a dug-in defense bristling with coast artillery and antiaircraft guns.

The Cauldron (June 5 – 12, 1942): This swirling, complex tank battle, fought amid minefields, was part of the larger British defeat known as the Battle of Gazala.

Alam El Halfa (August 30, 1942): The high tide of the Afrika Korps. Low on fuel, the German panzers had one last chance to smash through the British defense and push on to the Nile delta, the Suez Canal and Cairo. They ran smack into new American-made Grant medium tanks dug in on Alam El Halfa ridge.

Kasserine Pass (February 14 – 21, 1943): After the long retreat from El Alamein to Tunisia, Rommel lashes out and smashes an American armored division. This was the first major encounter between German and American ground forces, and it showed Patton how much he still had to learn...

Maknassy (March – April, 1943): A grueling 19-day battle of attrition. Historically, Patton's advance was slowed by heavy rainstorms (not exactly what you would expect in desert warfare).

Tebourga Gap (March 26, 1943): A short scenario, in which a weak German rear guard must buy time, holding off two full-strength Allied divisions.

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The nine-wire, bi-directional print heads can print 324 cps in draft mode. Yet both printers deliver a very respectable near-letter quality output at a brisk 54 cps.

Exceptional Reliability

Both printers are rated at an impressive 6,000 hours MTBF for years of reliable operation. Forget about aggravating and costly downtime. You can count on these printers to stay up-and-running to meet the demands of your business.

Superb Paper Handling

The DX2300 features 80 characters a line; the DX2400 features 136 characters. Both let you switch from continuous forms to cut sheet paper at the flick of a lever. The rear feed tractors move the paper smoothly, greatly reducing the possibility of jamming.

Quiet Operation

Both operate at a low 55 decibels. That makes these printers two of the quietest units you can buy.

Affordable Price

Even with this list of impressive features, the DX2300 and DX2400 are surprisingly affordable. Discover them for yourself. The following authorized dealers have both printers in stock and are ready to give you a demonstration.

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Like the other games in this series, *Rommel* provides complete utilities for modifying existing scenarios or designing your own. A 72-page manual documents the rather complex menu-driven game system. A full-color fold-out map details each of the eight battlefields. I would have liked more detailed information on "Order of Battle" (the strength and organization of the opposing forces). *Rommel* is a good value for any player who enjoys complex wargames. For a beginner it would be a tough, but rewarding study.

Strategic Simulations Group is apparently starting the long march of converting their 64K games to run on the IBM PC, Macintosh, Apple IIGS and Amiga. They have done such impressive things within the narrow scope of the Apple II and Commodore 64, that I can hardly wait to see what they can achieve with better graphics, faster processors and more memory.

Strike Fleet

Designed by: *Noah Falstein*
Programmed by: *Lawrence E. Holland*
Published by: *Lucasfilm Games (1987)*
For: *Apple II (64K)*
List Price: *$34.95*
Reviewed by: *Mike Markowitz*

Captain Kirk of the starship Enterprise only had to manage three weapon systems — photon torpedoes, phasers and the tractor beam. His enemies' weapons were even simpler, usually consisting of some force we've never seen before, Jim.

Consider the poor captain of a modern US Navy cruiser, like the 9500-ton Yorktown (CG 48). He has two 127 mm. cannons, two 44-round anti-air missile launchers, 8 Harpoon antiship missiles, two rapid-fire Phalanx antimissile guns, and two different kinds of antisubmarine weapons. He has about five kinds of radar and two kinds of sonar to aim with, and about a dozen different kinds of radios to communicate. He also has to worry about two helicopters, with their own array of weapons and sensors. Computerized displays and control systems help a good deal, of course, but they cannot substitute for human judgment, when your enemy can be anything from the latest nuclear-tipped Soviet cruise missile to an Iranian fanatic with a grenade launcher in a speedboat.

Strike Fleet, from Lucasfilm Games, attempts to simulate, within the limits of an 8-bit personal computer, the complexity of modern naval combat. The scope of this simulation excludes the aircraft carrier, that mighty and fragile Queen of the oceans. In fact only ten ship classes are available to the player:

Ticonderoga — missile cruiser designed as a battle-group flagship

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Belknap — older (1960's) missile cruisers

Burke — newest destroyers, similar to Ticonderoga

Spruance — modern antisubmarine destroyer

Kidd — similar to Spruance, with more weapons

O.H. Perry — small general-purpose escort

Pegasus — fast hydrofoil armed with cannon and Harpoon missiles

Sheffield — British destroyer, sunk in Falklands War

Broadsword — British antisubmarine frigate

Enemy forces include five different kinds of submarines, ten different kinds of surface ships, three kinds of aircraft and about a dozen different missiles. The specifications and performance information used in the game reflect the unclassified data in the standard reference books (such as *Jane's Fighting Ships*). The designers seem to have guessed about the secret data, like minimum ranges and hit probabilities for missiles.

There are ten situations or "scenarios" the player can choose. An introductory scenario recreates the Iraqi attack on the *USS Stark* last year. Two more tanker convoy escort scenarios are set in the Persian Gulf. Two scenarios pit the British against the Argentines in the South Atlantic. The remaining five situations are fought in the North Atlantic, against the Soviet fleet and naval air force.

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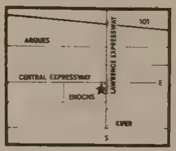

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Shipyard screen, adding or deleting ships. When you sail out of the shipyard, the display changes to a large-scale map, the Command Information Center, where you can set your destination and issue various orders. You can "Zoom" down several levels for a closer look at your own ships and the enemy.

Finally, you arrive at the Bridge of your flagship, with a view of the sea ahead, your weapon control panel and various status indicators. When you select a target in range you get a "binocular" close-up view. Using the joystick or the keyboard you have a vast array of tactical choices and decisions to make. Will your radar and sonar be active, or passive? Which enemy target will you fire on first, with what weapon? What will you do about those incoming enemy missiles?

You can jump rapidly from one ship to another, or even into the cockpit of a helicopter if you have launched one. For the sake of simplicity, the helicopters use the same display as the ships, but they have fewer choices.

If you lose track of your ships' positions, you risk disastrous collisions. In the shallow Persian Gulf it is all too easy to run aground if you get too close to shore, but you don't have to worry about minefields.

The game has a variable time scale. You can speed up the clock, repeatedly doubling the rate, up to a factor of 128. If a missile locks onto one of your ships, a very high rate will automatically drop to a factor of 8. You can pause or quit at any time, or save a game to a formatted blank disk (DOS 3.3).

Damage and damage control are handled in a simple, abstract way. As you take hits, a green status bar gradually changes to red, and you lose some of your weapons systems. One hit will often sink a small vessel. If you have a target in the "binocular" view, you can see the explosion. For close-range gunnery you need to use the joystick to aim your shots precisely. When you start to get hits, fire A LOT OF SHELLS — they don't do much damage individually, and you usually have hundreds of them.

Your performance is rated in terms of "promotion" to a higher rank. You gain points by completing a mission, doing it with fewer ships than the default allotment, and destroying enemy forces.

A 64-page illustrated Operations Manual is packed with information, including hints and tips. A quick reference card summarizes the keyboard commands — you will need to keep it beside the monitor. On the Apple IIGS you are told to run the game in "IIe emulation mode" but you are not told what this might mean. By trial and error, I found out that it simply means "normal" (slow) system speed.

Strike Fleet was designed by the same team that did *PHM Pegasus*. The game has the same excellent graphics (better on the Commodore 64 than the Apple II). The user interface is similar, but in this more complex environment, it comes close to information overload. In a real ship's combat information center, anti-air, anti-surface and anti-submarine actions are controlled from separate fire control display consoles. When the game is converted for more powerful computers the designers

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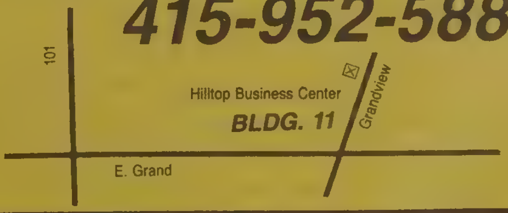

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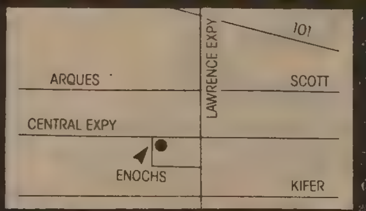

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should consider this...

Strike Fleet only has a single-player option, and you can only command the good-guys (US Navy or British Royal Navy). You cannot create your own scenarios. Neverthelesss, within the limits of 64K, this is a remarkably rich simulation of modern naval combat. Recent events in the Persian Gulf confirm the accuracy of many of the technical decisions and design choices reflected in *Strike Fleet.* If the designers had written for a 128K system, they could have created a better package for a smaller market. It's a dilemma every game publisher faces. *(Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404.)*

GBA Championship Basketball: Two-On-Two

By: *Paul Terry and Jack Thornton*
Published by: *Activision*
For: *Apple IIGS (512K)*
List price: *$44.95*
Reviewed by: *Mike Markowitz*

To REALLY simulate the kinetic frenzy of basketball you would need a supercomputer, a legion of programmers and a budget of Pentagon proportions. By confining the scope of the game to two-on-two, however, this simulation fits into an Apple IIGS. (There are also versions for MS-DOS, the Amiga, the Atari ST and even the 8-bit Apples and Commodores.)

The designers wasted much time and disk space giving themselves elaborate credit on a series of opening screens, formatted as headlines in the "Gamestar Gazette." At the end of every game, the Gazette returns to report the vital statistics.

The program is carefully designed and well-organized, so that you are never overwhelmed with too many options. An initial "chalkboard" screen lets you select Demo, Game or Practice. In Demo mode, the computer controls all four players. In Practice mode, you can have two human-controlled players, or one player on the court by himself. There is a wide range of player options for the Game mode. You and a computer-controlled teammate can take on a computer team, or two humans can team up to play against the computer.

The animated figures on the court are drawn from a roster of ten players, loosely based on real-life basketball stars. Although the figures are quite small, the quality of the animation is superb. Players are numerically rated for shooting accuracy (inside and outside the "key"), dribbling, stealing, quickness and jumping ability. Within limits, you can change these values to emphasize certain styles of play. You can even toggle the skin color of your players (black or white), something no real manager has ever attempted.

You use the joystick or keyboard to move, pass and shoot. A quick tap on the joystick button (or Option key) launches a pass, or requests one from your teammate. To make a shot for the basket, you press and hold the button. Your player-figure will begin the shot by jumping, and will release the ball when you release the button. Under the right con-

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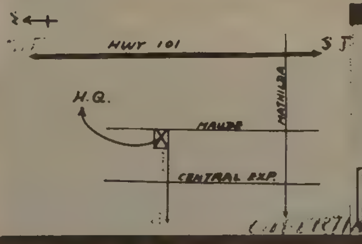

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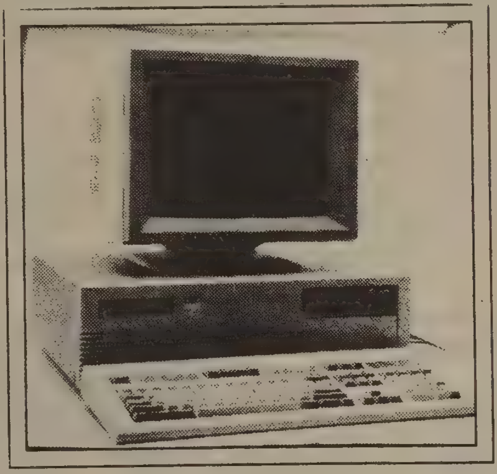

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ditions, hook shots, slam dunks, tip-ins and rebounds are all possible.

Only half the court is actually shown on the screen at one time. The display flip-flops when the ball handler crosses the center line. This can cause some confusion and disorientation until you get used to it.

The game system keeps track of the intricate rules of the basketball—it manages the clock, calls fouls and metes out penalties. The clock runs in real time, with a complete game taking four six-minute quarters. Whenever there is a change of possession of the ball you have an option to "call your play" by choosing an offensive and defensive alignment. This tells your computer teammate what to do. The play-calling screen replaces the scoreboard for a few seconds while the players run down the court.

Two-On-Two requires a IIGS with the "revised" ROM chips (version 01). This requirement is clearly marked on the outside of the package. You need a color monitor, and at least 512K of RAM (the current standard for games on the IIGS). A 30-page illustrated manual provides clear, detailed explanations that assume no previous knowledge of the game. We appreciated that. Although we never liked basketball much, we liked this game a lot.

Sports simulations on the eight-bit Apple IIe and IIc computers were usually disappointing conversions of titles that looked and played better on other systems. The first crop of games for the IIGS show how much difference a faster processor, super high-res graphics and digitized sound can make. A good computer game is like a good dramatic production — it creates a "willing suspension of disbelief" for the audience. By this criterion, *GBA Basketball* is a winner. (Activision, Inc., 2350 Bayshore Parkway, Mountain View, CA 94043. (415) 960-0410.)

Star Saga: One Beyond The Boundary

Designed by: *Andrew Greenberg, Michael Massimilla, Rick Dutton and Walt Freitag*
Published by: *MasterPlay (1988)*
For: *Apple IIGS (512K)*
List Price: *$79.95*
Reviewed by: *Mike Markowitz*

Ho-hum, another interstellar, interactive, role-playing space opera...I'm increasingly skeptical about science fiction games. Too easy to write. You can get away with anything...

What! It's written for the Apple IIGS and it doesn't even have super-hi res graphics and stereophonic sound? Then you pick up the box. It's heavy. You check out the credits — hey, that's the guy who designed *Wizardry*. He's heavy, too.

Star Saga is an intense, sustained, richly textured exploration of future history. It's partly a game, and partly a set of computer-mediated novels. You become one of six characters — starship pilot, renegade priest, smuggler, mystic, biologist or engineer. Set in the year 2815 A.D. and stretching across an arm of the Galaxy, this is a BIG story. Like the classic *Star Trek* episodes we love so well, it is full of sly references to contemporary issues.

You're going to need plenty of room to spread out the map, a thick sheaf of booklets and a notebook (provide your own). Before you start, read through the reference manual and the briefing booklet for your chosen character. You have a goal or quest, but not much information, and it's a BIG galaxy. Games can have up to six human players, but as an Apple IIGS user, it's unlikely that you have as many as five friends.

Put your colored glass "starship" token on your designated starting point, and lay in a course. You navigate from one colored triangular sector to another, telling the computer each move. During each turn, the computer, acting as Game Master, will instruct you to read some text in one of the booklets and choose some course of action. Depending on your choices, you may gain or lose possessions, information, or your life.

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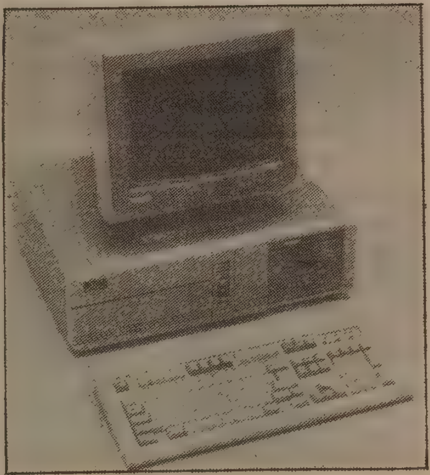

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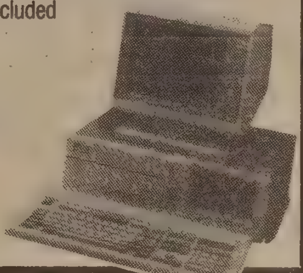

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retriever and score-keeper. It keeps track of your performance, and constantly adjusts the difficulty of the situations you encounter. This is not the sort of unforgiving game that kills you off repeatedly until you master a few tricks. At least in the early stages, it's a challenging but user-friendly universe.

The game includes two colorful fold-out maps, six colored glass tokens, one 3.5" program disk and a staggering amount of documentation — 20 different booklets. Everything is handsomely boxed and meticulously produced. The game screens are dull, utilitarian 40-column text. The game is *not* copy protected, and you are encouraged to make a backup. No sane person would ever attempt to pirate this package, even if he *owned* a photocopy machine, due to the sheer mass of printed matter. You need to keep track of a great deal of information, but no computer resources are provided to help you out. This is irritating — if I wanted to keep a log book manually, I wouldn't have bought a computer.

A game in progress can be saved right on the program disk. You could not possibly "finish" a game in one sitting — this is an interactive adventure to be enjoyed over a period of weeks or months.

Star Saga is certainly a good value. The game can be played many times for hundreds of hours without becoming stale. I question the credibility of the future history, however. Starships will never be cargo vessels — people who can build a faster-than-light drive will have little need to haul raw materials across the parsecs.

This future is too ordinary, lacking in the sense of wonder that the best sci-fi writers have always been able to create. Nine inhabited planets are stagnating within a self-imposed "Boundary." Each of the characters in the game is a kind of rebel who has chosen to violate that Boundary. If there are still recognizably human persons around in 2815 AD, their values and problems will be radically different from outs — imagine how ancient Greeks or Romans would react to the *Cosby Show*, or a typical shopping mall.

It's been said that there are only two themes in Western literature — someone sets out on a journey, or a stranger arrives in town. *Star Saga* is pretty good interactive fiction, but pretty pedestrian sci-fi. Since this is the first "volume" of a trilogy, there is plenty of time and space for improvement. (Master Play Publishing Co., 8417 Sun State St., Tampa, FL 33614, 813/888-7773.)

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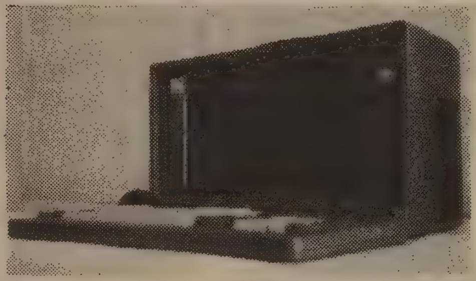

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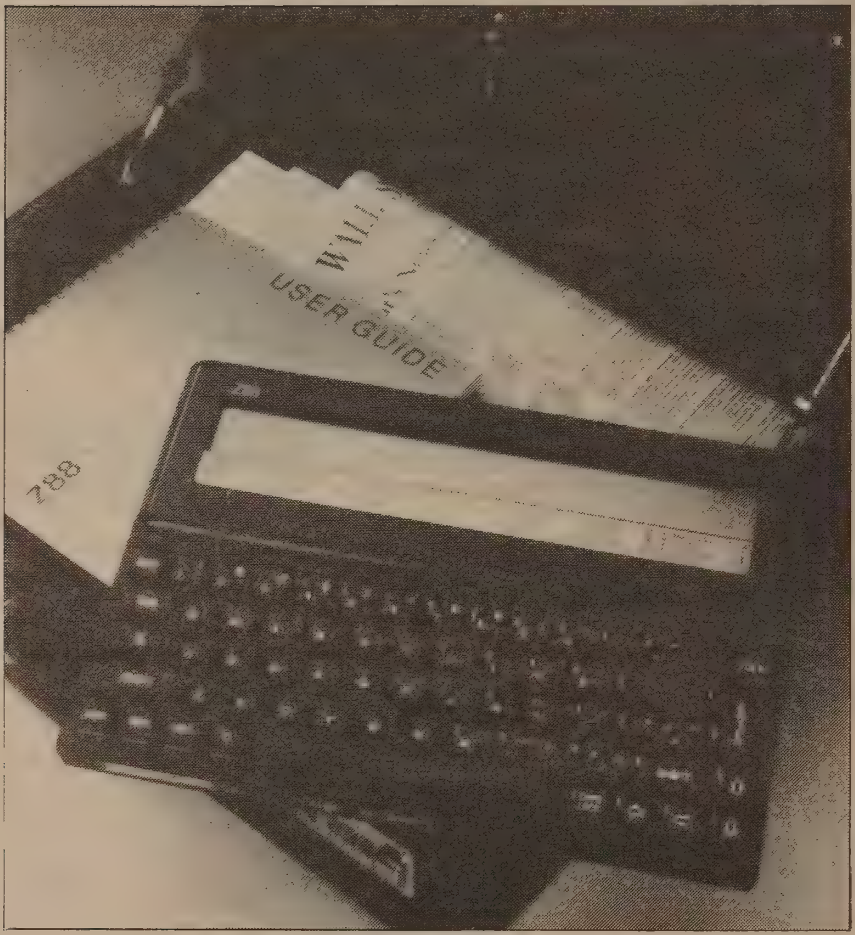
Z88 Laptop

The Business Traveler's Dream

By Matthew Leeds



Laptop users are a new breed. They can be recognized by several characteristics: one arm is longer than the other, the tops of their thighs have permanent flat spots and one shoulder is lower than the other. These and other symptoms are the result of carrying and using laptop computers that weigh in excess of 10 pounds.

That 10-pound weight is just for the computer. By the time you add disks, extra batteries and/or battery chargers, manuals, carrying case and other necessary accessories, you've got a chiropractor's delight.

I suppose that if you are trying to duplicate the full power of your deskbound PC in a portable, lugging the weight and bulk of a six-month-old infant with you makes sense. However, I don't need a hard disk or a full-screen display on the road. I use a laptop for text entry, keeping track of my appointments, maintaining a Rrolodex of contacts and keeping track of my expenses while on the road. The smaller and lighter the machine, the better.

That's a long lead into a product review, but I wanted to lay out the groundwork for what's to come. How about an under-two-pound laptop that runs for 20 hours on four AA batteries and has a full keyboard, all the software you'll need in ROM onboard, expansion capability of 3Mb, and a supertwist LCD display? The entire package is the size of a notebook and less than an inch thick.

The Z88

The on-board software includes a word processor, database, spreadsheet, diary/appointment manager, clock with alarm, calendar, calculator, terminal program and BASIC. Each application is interactive with the others, and you can run any application via hotkeys while in any other application.

The LCD display is an 8-line by 80-column layout, with an extra section to the right used for status displays or a thumbnail view of a full page while in the word processor. The display is very readable, although the characters are a little small for my taste. A contrast wheel does let you adjust the display for your particular lighting conditions. The display is an integral part of the surface of the Z88, and there is no provision for tilting just the display. There is a swingout backrest that can be used to prop up the entire unit at an angle.

The keyboard is a little odd. The size of the keycaps is more than adequate, but there is virtually no tactile feedback. You can toggle on a discreet beep if you desire. The entire keyboard is rubber coated. This protects against spilled drinks and the like, but the rubber coating tends to collect dust and lint. This does not affect the functioning of the machine, and is easily cleaned.

The software included is remarkable. The entire operating system, all of the applications software, and

How about an under-two-pound laptop that runs for 20 hours on four AA batteries and has a full keyboard, all the software you'll need in ROM, expansion capability for 3Mb of RAM, and a supertwist LCD display? The entire package is the size of a notebook and less than an inch thick.

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BASIC are contained in 128K of ROM. Each application has a pop-up menu or set of menus that list all of the functions and their keyboard equivalents. You can use the cursor keys to select a menu function or just use the keyboard. Some of the applications also have a series of help screens accessed by pressing the help key. Additional help will be available in a ROM pack (see below).

The word processor, spreadsheet and database are a single integrated application called *Pipedream*. Ported to a traditional PC, this application would compete well with existing products. The word processor offers every feature you would expect or need in a laptop short of a spelling checker or thesaurus: block moves, formatting, headers and footers, soft styles such as bold or underlining, super and subscripts, search and replace, and the journalist's favorite—word count.

The Z88 makes the most of a set of batteries. It will run for up to 20 hours on a set of four AA's. It does not use a disk drive, instead storing data on either CMOS RAM packs or by burning EPROM packs. RAM packs do not contain battery backup, but draw their power from the Z88. An onboard capacitor stores sufficient power to allow battery changes without loss of stored data.

The Z88 comes with 32K of RAM and three slots for RAM/ROM/EPROM packs. RAM and EPROM packs in 32K, 128K and 512K are available, and 1Mb packs should be available soon. Additional applications software will be distributed on ROM packs.

There is a serial port for connection to either a printer or data transfer to another PC. The port uses a DB9 connector, but cables for either RS-232 or parallel connection are available. I used a serial cable to move files back and forth to my Amiga with no difficulty.

In many ways the Z88 is my laptop Amiga. Although it lacks color and graphics, its ability to let me switch from application to application at will fits nicely with the work style I've developed using a multi-tasking machine. The Z88 doesn't multi-task, but it switches from application to application quickly enough that I don't mind.

If you get the feeling that I am enthusiastic about the Z88, you're right. It's not perfect, but it is far and away better for my purposes than any other laptop I've seen.

A few other observations are in order. The filing system on the Z88 supports sub-directories, creation dates, wild card searches, batch files and redirection of screen output to printer or file. There is a built-in printer driver editor program that lets you build your own driver for any printer (sorry, no support for PostScript yet). The alarm can be set to execute a program or batch file or just display a message. You can cut and paste from any application to any other easily and quickly.

The BASIC included with the Z88 is a version of BBC BASIC. This includes some limited machine code calls and assembler capabilities. Given some developer support (and I expect hackers will love this machine) I'd expect to see third-party products arriving soon.

Conclusions

If you get the feeling that I am enthusiastic about the Z88, you're right. It's not perfect, but it is far and away better for my purposes than any other laptop I've seen. I never have to think about whether I want to carry it with me, never have to worry about its batteries running out of juice, or about it being too obtrusive should I use it for notetaking in a conference or class.

A basic system would include the Z88 and a 128K RAM pack. At list price this would run $659.00. A serial cable would add $22.00. That's it. No money for software, it's included. No other accessories required. Perfect for journalists, sales people, students, or anyone who needed a second, portable computer. (Z88 Laptop Computer, SSI Computer Systems, 424 Cumberland Avenue, Portland, Maine 04101, (207) 761-3700. List Price — $549.00.)

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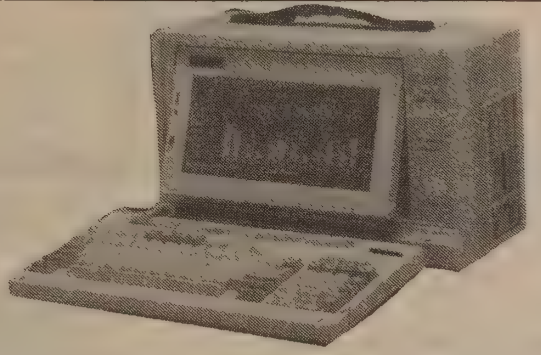

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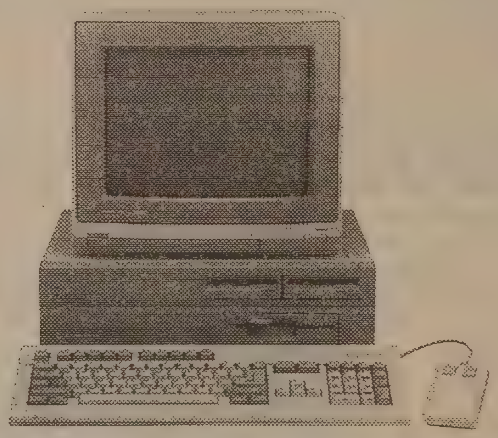

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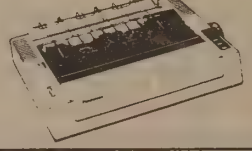

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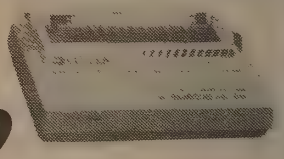

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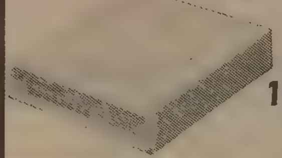

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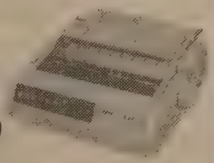

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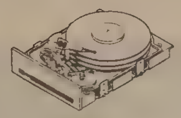

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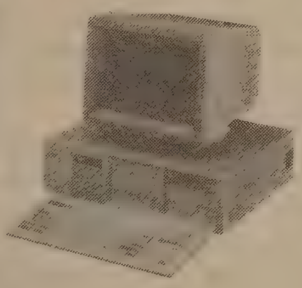

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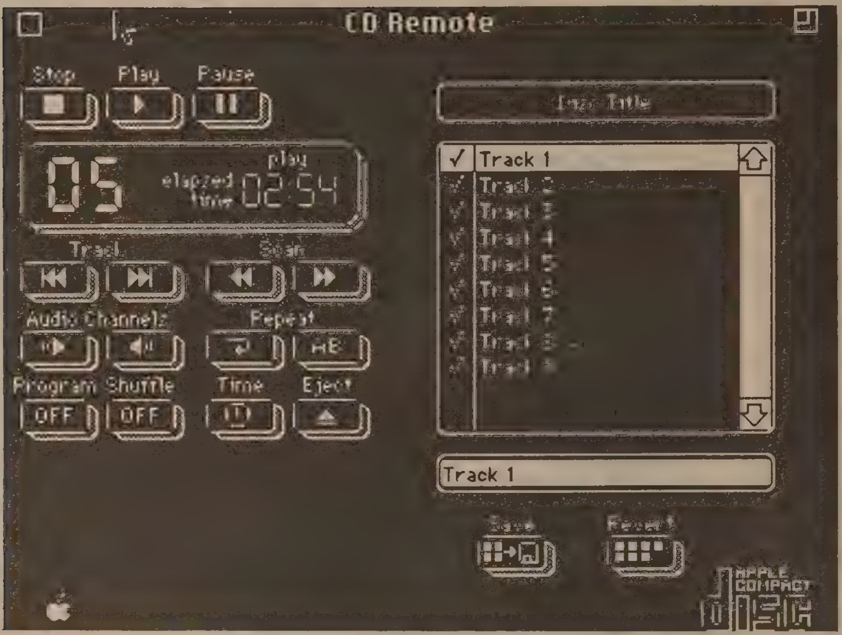
Power With A Price

The Apple CD SC Drive

By Mike Markowitz



The CD Remote desk accessory lets you use the CD SC as a compact disc player with sophisticated programming features.

The technology of the compact audio disk is so obviously superior to magnetic tape or grooved vinyl that in only a few years it has become the audiophile standard for quality sound reproduction. The compact disk never wears out because nothing but a tiny laser beam ever touches the surface. Because there is only one industry-wide standard, the disks are easy to mass-produce and easy to market.

Now watch how fast the same thing happens with computer data. The Apple CD SC drive shows how easy it's going to be.

The SONY laser optics and electronics built into the drive make it possible to play ordinary audio disks as well as data. Since it will be many months before software publishers can supply a wide variety of digital data disks, this means you can do something useful and entertaining with the drive while you wait.

Physical Description

The CD SC drive is a flat box measuring 266 mm deep, 246 mm wide and 84 mm high (that's 10.47" x 9.69" x 3.31" for you who languish in the Dark Ages of measurement). Weighing in at only 4 kg. (8.8 pounds), it closely resembles the Apple SCSI external hard disk drives, and can be neatly stacked with other peripherals. The CD SC has its own 40 watt internal power supply, and like other SCSI devices, should be turned on before the computer. Power on (green) and disk access (red) LEDs provide reassuring status indications. The drive controller board uses surface-mounted chips, and the case is carefully shielded against electromagnetic interference.

SCSI (Small Computer Systems Interface) is a high-speed parallel data bus built into the Macintosh Plus, SE and II. Apple also sells a $299 SCSI adapter card for the Apple II+, IIe or IIGS. To address the CD SC drive, the Apple II SCSI card must have the "Revision C" ROM or later. With the proper MS-DOS device driver, which nobody has written yet, the CD SC should even work with suitably equipped IBM PCs and compatibles.

Up to eight SCSI devices can be "daisy-chained" as long as the cable length does not exceed 20 feet and one or two "terminators" (resistor packs) are installed according to simple rules. The CD SC drive has two identical 50-pin SCSI ports (in and out). Like many other Apple drives, the CD SC sports a tiny hole on the front panel for insertion of a bent paper clip to trip the disk ejection mechanism if the power is off and you need to get the disk out. There is also a real eject button, but this is only for use with Apple II applications. You poke the same paper clip into another hole in the rear panel of the drive to change the SCSI "priority number," which is displayed in a tiny window.

A pair of RCA-type speaker jacks on the rear panel and a stereo headphone jack on the front provide audio output. A smooth thumbwheel provides volume control for the headphone jack. If you are connected to an external amplifier, you use the amplifier's own volume control instead. By rearranging the furniture and rummaging through the garage for extra phono cables I was able to connect the CD SC to my venerable Fisher vacuum-tube amplifier, with excellent results.

I tried out several audio disks that have scratches or manufacturing flaws that cause "skipping" on my little portable CD player—the superb laser optics of the CD SC drive played every track perfectly.

Nobody is going to shell out over a thousand dollars just to listen to the CD SC when perfectly serviceable audio CD players can be had for under $150. The success or failure of this peripheral depends on the availability of published data disks.

Specifications

To speed data transfer to the computer, the drive has its own 64K data buffer. The CD SC can send between 150K and 172K of data per second to your computer. The disk rotation speed varies over the radius of the disk, from 530 to 230 rpm, to maintain a constant linear velocity.

A single disk can hold either 656 or 748 megabytes of data (there are two different encoding modes). Redundant error correction codes mean that about 550 megabytes of user data are

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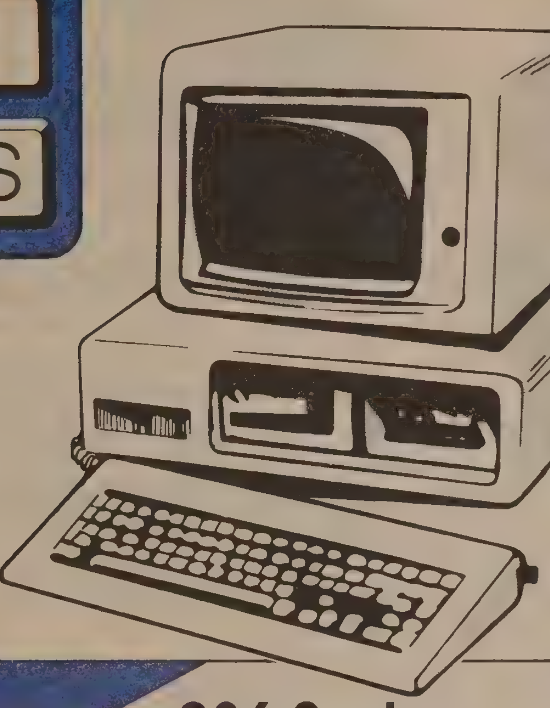

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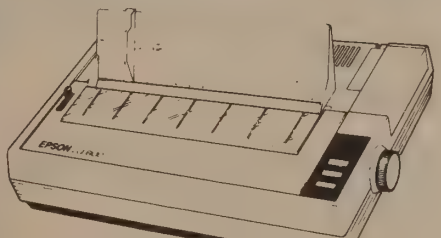

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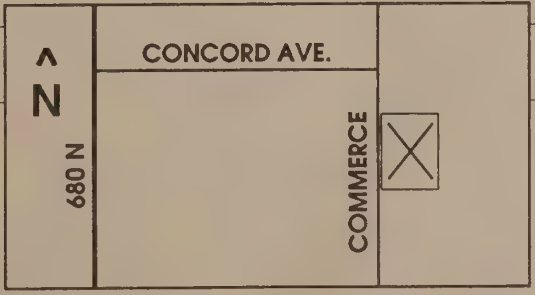

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available. This represents the contents of fourteen 40Mb hard disks, 704 double-sided Mac floppy disks, or 3928 single-sided Apple II floppy disks. You could also try to imagine 270,000 pages of text, or nine secretaries typing 100 wpm for eight hours a day for a whole year.

Installation

For the Macintosh, installing the CD SC drive requires copying a resource file to your system folder, installation of a desk accessory and (possibly) setting a SCSI priority number. When you boot the Mac, a small icon appears in the lower left corner of the opening screen to remind you that the CD SC is installed. "CD Remote" also appears as a desk accessory under the Apple on the menu bar.

CD Remote is a delightful and astonishing little feat of programming. It simulates a fancy hand-held remote controller for an expensive compact disk player. By clicking on the appropriate button you can play, stop, pause, step through the tracks, set the player to randomize the play list, and do many other functions.

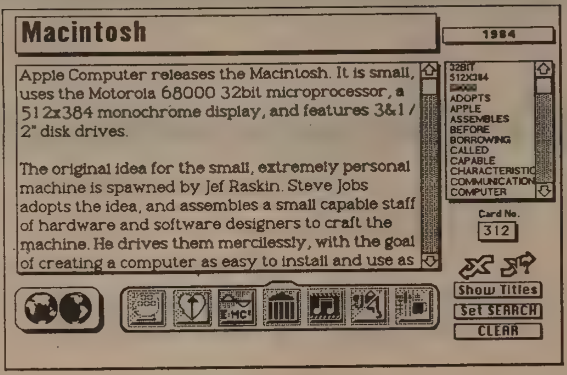
For the Apple IIGS, you need only install a small (21K) desk accessory in your system folder. For the Apple IIe, the "CD Remote" program is a separate ProDOS 8 application, provided on a 5.25" diskette included in the package. It uses the keyboard rather than the mouse and has a simplified set of features.

Software for all three computers (Mac, IIGS and IIe) is packaged with the drive, along with a well-illustrated and clearly written 75-page Owner's Guide. A brief Appendix explains the technical principles of CD-ROM.

Operation

To play an audio of data disk, you must first insert it into a "caddy" or holder, which protects it from dust and scratches and aligns it precisely in the drive. The caddy has a hinged lid which seemed rather flimsy, and a rather tricky snap closure. Buy extra caddies if you are going to be using many different disks.

On the second day we tested the drive, the gear train of the loading tray motor mechanism seized up and refused to accept the caddy (it just cycled up and down as long as power was applied). The technician at a local ComputerLand store was able to fix the problem in a few minutes. Although the drive is quite new, the



Macintosh

1984

Apple Computer releases the Macintosh. It is small, uses the Motorola 68000 32bit microprocessor, a 512x384 monochrome display, and features 3&1 / 2" disk drives.

The original idea for the small, extremely personal machine is spawned by Jef Raskin. Steve Jobs adopts the idea, and assembles a small capable staff of hardware and software designers to craft the machine. He drives them mercilessly, with the goal of creating a computer as easy to install and use as

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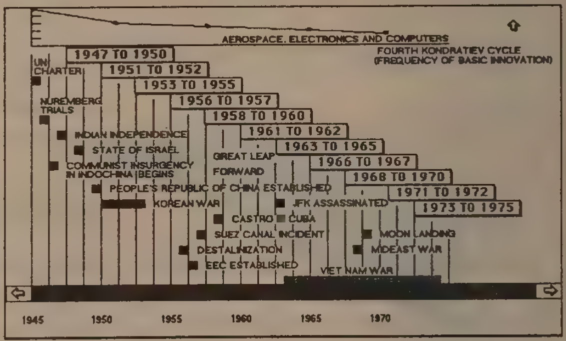

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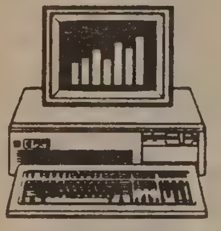

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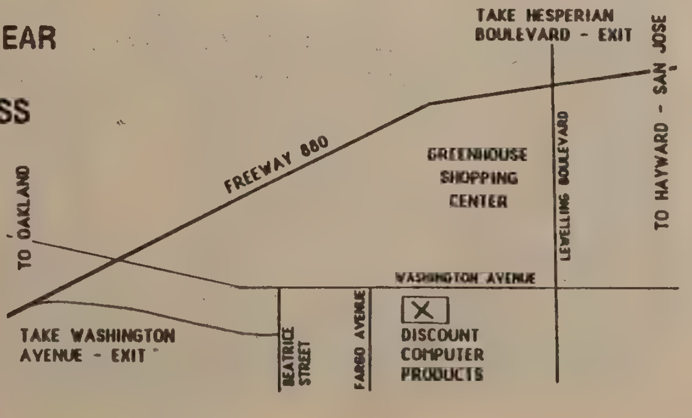
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Apple service manuals are already in place at authorized dealers. This speaks highly for Apple's tech support, but I cannot escape the feeling that the drive mechanism (at least on early production models) is a bit cranky and fragile. The disk loading slot (12 mm, or about a half-inch wide) is permanently open to the entry of dust and dirt. Apple engineers should consider a simple spring-loaded shutter, like the one found on every car stereo tape cassette player.

Software

We tested the software on a Mac II, an Apple IIGS in its native 16-bit mode, and a IIGS emulating a IIe. In every case, the software worked smoothly. Occasionally, the IIGS failed to recognize the drive, but re-booting the computer solved this problem.

Although the ability to play audio CDs is a nice extra, nobody is going to shell out over a thousand dollars just to listen to the CD SC when perfectly serviceable audio CD players can be had for under $150. The success or failure of this peripheral depends on the availability of published data disks.

Most of the initial offerings are highly specialized databases for the medical, legal and financial communities. Reference works like *Books In Print* and the *Grolier Encyclopedia* have also been announced.

We received two Macintosh disks to review. *CD ROM Delivers...* is a demo disk from Discovery Systems including a number of colorful animated sound and graphic promotional clips for Mac software. *Time Table Of Science And Innovation* from Xiphias, Inc. is 27 megabytes of *HyperCard* stacks that document the history of science and technology in a unique, interactive way. In each case, when you insert the disk in the drive, it appears as an icon on the Mac desktop. You can open it in the usual way, but you cannot save anything to the disk, or alter the data in any way—this is a read-only medium. *HyperCard* (version 1.2 or above) is compatible with CD-ROM stacks. Other CD-ROM applications will use their own indexing and retrieval software that may be provided on a separate floppy disk.

Apple is developing CD SC software drivers for the Mac and Apple II that will read CD-ROM disks pressed in the "High Sierra" format. Buyers of the CD SC drive can receive this software free, some time before the end of 1988. Hundreds of existing disks for MS-DOS computers use the High Sierra format.

The Future

According to Apple, if you need more than 100 copies of 20 megabytes of data or more, CD-ROM is a sensible solution. Parts catalogs and technical manuals are only two examples of possible applications. If a CD SC drive were built into a portable computer, a maintenance technician could carry a complete set of aircraft manuals out to the flight line, and no critical pages would ever be torn out or stained with grease. Updates would be a simple matter of discarding the old disk and inserting a new one.

By attaching a CD SC drive to an AppleTalk network file server, the cost of the hardware can be spread over many office, engineering or student workstations.

Obviously, the price of a disk will depend on the labor required to assemble and index the data, the potential size of the market and many other factors. Many mass-market disks should sell for $150 to $300. The facilities and equipment required for mastering and pressing disks are enormously expensive, but any plant that turns out audio disks can manufacture CD-ROMs. With rapid improvements in technology, economies of scale and growing competition, costs are dropping rapidly. According to one published estimate (*Infoworld*, March 14, 1988) the installed base of CD-ROM drives may reach half a million by the end of 1992. It looks as though a lot of those drives will have rainbow Apples on them. (Apple CD SC Drive—list price $1199. Apple IIs require Apple II SCSI card. May also require Apple SCSI system cable [$50] or peripheral cable [$45] and SCSI terminator [$30].) ☐

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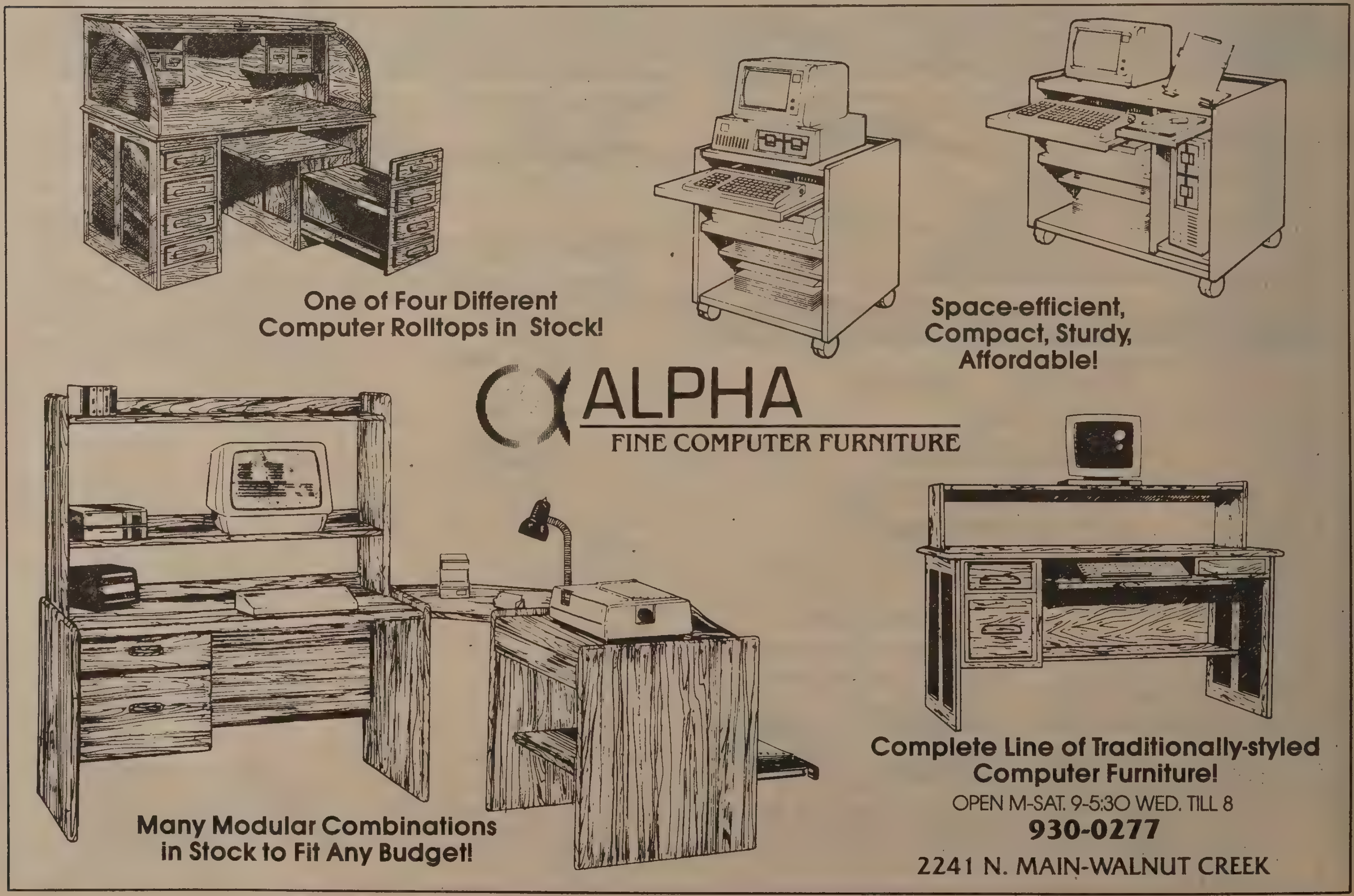
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WordPerfect For The Amiga

Or, The DOS-Ness Monster

By Sue Albert

WordPerfect
for the Amiga
WordPerfect

To be honest, I must admit that other Amiga users forewarned me that I was going to hate *WordPerfect.* "It's not an *Amiga* word processor!" they said, with the earnestness of true believers.

Well, they were right…and they were wrong.

For years I'd used various word processors on the Commodore 64. I'd even taken a class in *WordStar* once. As more writing assignments came in, I realized that I'd outgrown the C64, and I've moved on to the Amiga.

When *WordPerfect* arrived, I was still getting acquainted with the Amiga's operating system. The software arrived in a huge box which proved to contain four disks, a key overlay, a quick reference sheet and a 3 1/2-pound, 600+ page manual. Of which, I soon discovered, 30 pages were devoted to installation.

Hey! Whoa! Hold on! Where were all the point-and-click options? What was all this jargon?

After hours of labor, I hadn't begun to write. While I got the printer up on the first try, the Spell Checking and Thesaurus resisted all my efforts.

Finally, I called the toll-free tech support number. "What means this pathname stuff?" I inquired. The Techperson said, "It simply wants the disk drive number and the disk name."

"Well," I reasonably wondered, "why can't I just click them, or why doesn't the manual just put those requests in simple English?"

The awful truth dawned. "Say, this program is still suffering from a slight case of MS-DOS, right?"

The Techperson replied, "It would be helpful if you got a copy of the MS-DOS manual and kept it handy."

"What?" says I. "I didn't get an Amiga to learn MS-DOS…."

This was what my friends had warned me about. While not a direct port from the IBM version, Amiga *WordPerfect* was neither a graphics program nor WYSIWYG, only spangled with window-dressing, pull-downs and mouse-aerobics. Intuitive, in-schmoo-itive. I was going to have to speak *its* language.

With a sigh, I started the first of the 28 tutorials.

Learning WordPerfect

The four-color loose-leaf manual is attractively printed and well organized, indexed and illustrated. It presents most of the information you'll need, first in the tutorials, then in expanded form in the alphabetically-organized reference section. While it contains a few errors, it also reflects a genuine concern for the user and makes an effort to present all information in detail. Key words are in bold print, and major sections are tabbed; the manual also includes a small glossary and appendix. Mouse commands are shown in a narrow right-hand column on each page.

To squeeze in commands for its multitude of features, *WordPerfect* uses all ten function keys, both alone and modified by three other keys; it also uses the numeric keypad. The drudgery of learning a new keyboard setup was offset by the discovery of new features, e.g., a word count two keystrokes away and the program's ability to insert the current date in a document. While the tutorials are often boring, they're effective at teaching the skills you'll need.

> **While not a direct port from the IBM version, Amiga WordPerfect is neither a graphics program nor WYSIWYG, only spangled with window-dressing, pull-downs and mouse-aerobics. Intuitive, in-schmoo-itive. I was going to have to speak ITS language.**

Since many choices are presented in windows and numbered, they can be toggled either by the number keys or with the mouse. You are given the freedom to create the system which works best for you. I opted for a combination of keyboard/mouse use: it's easier to block text, click on requestors or move the cursor over large distances with the mouse, but I find the keyboard fastest for most toggling. *WordPerfect* does not always use the mouse to best advantage for point and select functions; in listing files on a disk, you must type in the drive you

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WordPerfect
for the Amiga
WordPerfect

It is the policy of WordPerfect Corporation to listen to its users and incorporate their suggestions into regular updates, a practice Commodore users may have some trouble getting used to.

wish to access every time.

WordPerfect takes some of the file-maintenance chores off of your shoulders. You can install a timed autosave which interrupts your work only for a few unobtrusive seconds (however, the WP programmers seem not to have grasped that the Amiga is a multi-tasking machine which could perform this function quite nicely in the background). The files are saved to a backup file, not your original file, so you can preserve your original text. You have the option of saving your text to a generic or text file for exporting to other applications; generic files will put soft returns at the end of each line of text, while text files will put in hard returns which may have to be stripped out for use in some Amiga programs. You can also save files in both IBM *WordPerfect* and IBM text files.

Features Galore

WordPerfect offers an amazing array of features. It can create headers, footers, columns, indexes and tables of contents. It will perform math functions within the document, hyphenate, outline, print labels and envelopes, mailmerge, fill in forms and more.

Even the features have features. There are nine ways to number pages, five index styles and 11 elements you can mix to display the date and time. Help screens are built in and give information with a keystroke. The Reveal Codes option lets you check your formatting; writers, editors and teachers will love the redline and strikeout functions, which let you tag text for possible insertion or deletion.

I find the expandable spell checker fast and fairly complete in its standard form of 115,000 words. The Look Up feature lets you pattern-match the parts of a word you know; using it and the Phonetic "sounds-like" finder helps you solve the eternal problem of locating a word you can't spell. Love words? You'll find the Thesaurus downright fun—clicking on any suggested word gives you its synonyms, a most Amiga-like feature.

If you find you must do something *WordPerfect* hasn't included, there's a powerful macro builder you can use to install just the right keystroke-saving automations. You can also chain macros together.

Graphics Handling

Using the Border Draw option, I found I could actually draw a little box of asterisks around a report title. I also found that I could change screen colors at will. Unfortunately, that's about the extent of *WordPerfect*'s graphics handling. It doesn't even use the Amiga's built-in fonts. Though it can send font commands to dot matrix printers, laser printers and typesetters, it cannot represent them on-screen. Another disappointment: the proper Roman numerals in the outline option can't be used within regular text.

There's no way to import graphics—the IBM and the Macintosh got these features first, though WordPerfect does plan a more Amiga-like update. Meanwhile, *WordPerfect Library* (see sidebar) does incorporate more Amiga-like features.

A Few Problems

This is a huge program with some complicated command sequences. The manual has to be read carefully and often, and many functions require extensive practice. I managed to crash the program in unrepeatable ways, and ran into some confusion with the spell checker. Often when I tried to check a single word, the checker would instantly bring up the menu again—which, as it turns out, is exactly what it's supposed to do, though the manual doesn't say so.

The Amiga 2000 has a built-in clock, but I couldn't get the date to progress automatically until I called tech support. As it turns out, the setclock command must be copied from the Amiga workbench to the startup sequence in the *WordPerfect*

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If you're an Amiga user who does a large amount of writing, WordPerfect is worth investigating.

workbench to function.

Support

You always have a safety net with the WordPerfect technical support staff, reportedly over 200 strong. They're polite, patient, knowledgeable and *there,* five and a half days a week, at the end of a toll-free number. With all the new releases, be prepared to redial a few times to get through. You can also use this line to make suggestions and be confident that they'll be taken seriously—it is the policy of WordPerfect Corporation to listen to its users and incorporate their suggestions into regular updates, a practice Commodore users may have some trouble getting used to.

Conclusions

In a sense, my friends were right. In its current state without a graphics interface, *WordPerfect* is not a true Amiga program, though it does leave me with the sense that beneath the Amiga's interface lurks an operating system with real similarities to DOS.

My friends were also wrong. I like *WordPerfect.* More importantly, I need its power, and I'm glad it's here *now,* DOS personality and all. I'll live with its limitations for the time being, and move files to a desktop publishing program or to another word processor to set fonts, graphics and color.

If you're an Amiga user who does a large amount of writing, *WordPerfect* is worth investigating. Besides, WordPerfect considerably reduces the pain to us thrifty Commodore users with its unique, unconditional 90-day money-back guarantee. (*WordPerfect for the Amiga,* $395. WordPerfect Corporation, 1555 N. Technology Way, Orem, UT 84057. (801) 227-4069.)

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WordPerfect Library

The very morning I mailed off my *WordPerfect* review, the doorbell rang and UPS delivered another heavy box. Inside were two *WordPerfect Library* disks, a command template and—you guessed it—another 600+ page manual.

While this library of desk accessories is short on "screen candy" and lacks the slightest touch of humor, there are hints that WordPerfect has begun to pick up on some of the Amiga's "touchy-feely-intuitive" capabilities. The calculator is realistically drawn and sized like the familiar object. The File Management calculator and Calendar sections are almost entirely mouse-driven, and you get a whirling freckle-sized animation while your disk is busy in File Management.

In addition to the Calculator, File Management and Calendar programs, the Library includes a Program Editor and a small database called the Notebook. These can be shrunk and placed in the background of your applications, to be called up when needed.

The Notebook is a small powerhouse of a database. It's very easy to create a Record design template; you can place as many fields as will fit on one screen into it. Though constrained on screen, each field can contain much more information, which is easily accessed by scrolling. Each record can contain up to 4K of text.

You can either import data from a *WordPerfect* list or simply fill in blanks. Files can be converted into a *WordPerfect* merge file, or rapidly sorted in many ways; any combination of fields can be sorted and listed in a variety of formats. You can print individual record files and lists, some of them, or all of them.

The Notebook includes powerful features like timed backups, macro building and linking. It can also be used with your modem to dial the phone numbers on files.

The Library Calendar has four parts onscreen: a conventional monthly calendar, a Memo Pad, an Appointments section and a To Do list. It is simple to access dates using the mouse, and an alarm clock can be set to remind you of pressing events.

You have a variety of ways to create and reorganize lists of planned activities. You can have regularly-occurring events scheduled automatically, with a warning when appointments conflict; you can also combine two people's appointment lists to search out conflicts or free time.

The Memo pad is roomy and lets you bracket a keyword to be placed in the calendar itself on the proper day. You can do searches and print out data from any date you select from the Memo Pad, Appointments, To Do list or all three. You cannot, however, print the calendar itself. Files can be saved as a *WordPerfect* file for editing or inclusion in documents.

The File Manager is a terrific utility that lets you keep the Amiga's complex disk file hierarchies organized and under control. You can use the mouse almost exclusively to highlight files or choice boxes; you can also choose files using the cursor keys, and there are keyboard equivalents of mouse commands for the mouse-phobic.

Files and directories can be moved, rearranged, searched, copied, switched or deleted; text files can be viewed (unformatted) and printed. You can pattern match to find a file, word-search or date-search a group of files, and sort by date, name or size. However, it would be convenient if you could also print out the disk directories and subdirectories.

The Calculator program includes three different gadgets: the Scientific, Financial and Programmer calculators, all with advanced math features. It's designed to be used with the mouse, but the number keys or the numeric keypad can be used and there are keyboard equivalents for some functions. You can work with Algebraic of Reverse Polish notation and use either US or European separator characters. Information can be saved and retrieved with all keysets and values in the memory registers intact.

You cannot print from the Calculators.

The Program Editor would be enough to entice any user, but along with the Programmer's calculator, it should be irresistible to anyone who pokes around in code. It uses many of *WordPerfect*'s more powerful features to edit text of program lines. You can have 32 document windows open at once and block, cut and paste from one to another. You can search and replace, append a file on disk with a block of text, and protect your work with timed backups without overwriting the original.

While this library of desk accessories is short on "screen candy" and lacks the slightest touch of humor, there are hints that WordPerfect has begun to pick up on some of the Amiga's "touchy-feely-intuitive" capabilities.

The Program Editor offers a Hex Edit mode, auto-indent and macro building/chaining. There are multiple varieties of Save, Print and Retrieve as well.

Like *WordPerfect* itself, this program takes time and practice for best results, but it gives you big computing muscle. No more typing in the drive destination every time you save or retrieve a file—you just point and click in the Library. Commands similar to those in *WordPerfect* do tend to have the same keystroke patterns, but it would be nice if WordPerfect Corp. would include a keyboard overlay template for the Calendar and Program Editor.

Meanwhile, the friendly tech support staff is there for you—same hours, same number. *WordPerfect Library.* ($129.)

—Sue Albert

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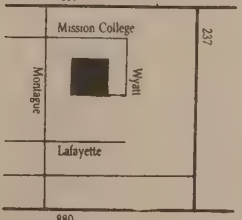

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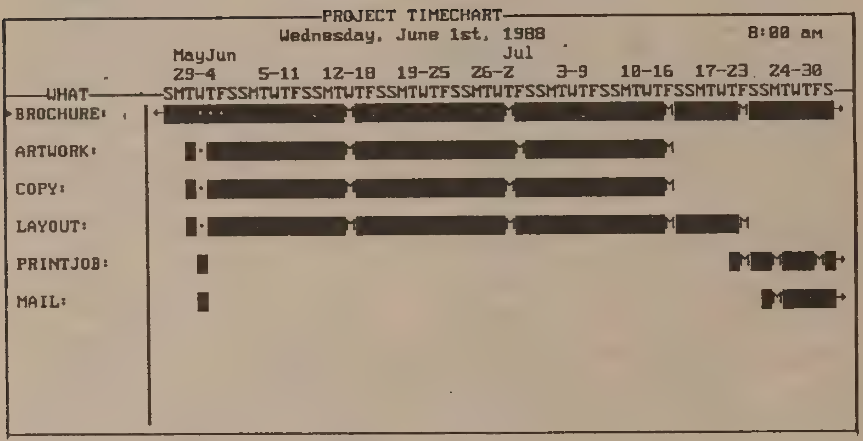
Who•What•When

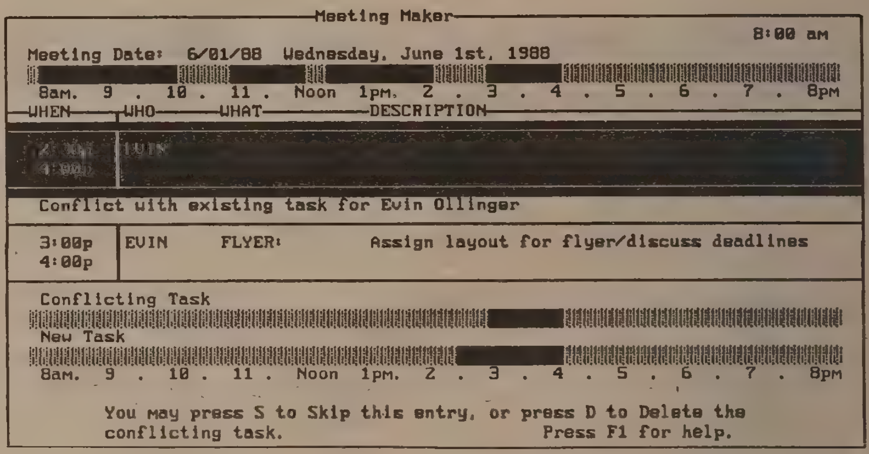
Time And Task Management For Busy Executives

By Steve Guttman



```
                        PROJECT TIMECHART
                 Wednesday, June 1st, 1988                  8:00 am
         MayJun                        Jul
         29-4   5-11  12-18  19-25  26-2   3-9   10-16  17-23  24-30
   WHAT      SMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFS
BROCHURE:
ARTWORK:
COPY:
LAYOUT:
PRINTJOB:
MAIL:
```

Who•What•When's Daily Calendar screen displays meetings, single time events, alarm reminders and prioritized To-Do's. These entries are automatically cross-referenced into people, project and time management views.



```
                         Meeting Maker
                                                              8:00 am
Meeting Date:  6/01/88  Wednesday, June 1st, 1988

 8am.  9  .  10 .  11 .  Noon  1pm.  2  .  3  .  4  .  5  .  6  .  7  .  8pm
WHEN      WHO       WHAT          DESCRIPTION
 2:00p   EVIN
 4:00p
 Conflict with existing task for Evin Ollinger
 3:00p   EVIN      FLYER:         Assign layout for flyer/discuss deadlines
 4:00p
 Conflicting Task

 New Task

 8am.  9  .  10 .  11 .  Noon  1pm.  2  .  3  .  4  .  5  .  6  .  7  .  8pm

      You may press S to Skip this entry, or press D to Delete the
      conflicting task.                          Press F1 for help.
```

Who•What•When allows you to book group meetings for up to nine people at a time. The program checks for conflicts and flags them as shown here.

A couple of years ago, the company I was working for bought an AT-class computer for one of its vice presidents. Like most VPs, this fellow was no computer jockey, and despite what I assumed were the best of intentions, his micro soon became an AT-class paperweight. It languished for years unused. Apparantly, our VP didn't have the time or inclination to learn the "joys" of DOS.

And if you think about it, there isn't much reason to give computers to executives. In general, they don't do their own typing or their own spreadsheets, and don't have time to play *Flight Simulator.* What executives spend their time doing is communicating: over the phone, in meetings and in writing. And until the computer helps them with those functions, they might as well use less bulky paperweights.

San Francisco based Chronos Software aims to change that situation.

Who•What•When, Chronos' first product, bills itself as software for people, product and time management. It's a little bit of everything—a smidgen of *Sidekick,* with a dash of *Agenda,* and a hint of *dBASE* thrown in. Its goal is to give those tired executives a reason to revive their dormant PCs and make them more productive to boot. *Who•What•When* is designed to take information in those appointment and address books (that most managers live and die by) and put it on the screens of their PCs. In addition, it adds a host of cross referencing and project-related features which aren't accommodated by its paper-bound counterparts.

The program is organized in three sections: WHO, which collates information on your clients and associates; WHAT, which deals with projects and task time-lines; and (you guessed it) WHEN, which organizes your daily and weekly schedules. There is also a section of miscellany called ETC which contains general housekeeping, reporting and file maintenance information.

WHEN

The Daily Calendar is the hub of *Who•What•When,* and maintains the basic functions of an appointment book. It lets you enter task, project and personnel information into *Who•What•When*'s database for your daily schedule of activities. The Daily Calendar screen shows a snapshot of the day's activities. At its top, a horizontal time bar graphically shows appointments occuring between 8 am and 8 pm. Below, a scrolling list of tasks shows the appointment times, people involved, project name and a short description of each daily task.

You can easily enter new appointments in the Daily Calendar, and duplicate, edit or move existing ones. You can move from day to day using the F7 & F8 keys or by highlighting a date on a pop-up calendar. While using the *Daily Calendar* is somewhat more work than entering the information into a "manual" notebook (we'll probably be calling them "analog" soon), it does offer some advantages. For one thing, once the information is in *Who•What•When's* database, it

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can be viewed in a variety of formats. For another, you don't have to worry about reading your own writing.

Who•What•When's "hook" is a neat cross-referencing utility that gives you convenient access to the person, project and memo databases. Whenever you're prompted to input one of these items (for example, to enter the name of a person you're meeting for an appointment), typing "?" will bring up a list of all entries in the database. You can scroll through this list and select your choice by highlighting an entry and hitting ENTER. This is an incredible convenience for entering or changing your appointments, and helps to maintain the integrity of your database. If you enter the name of a person or project that the program has not yet encountered, you are prompted to log a complete description of the item directly into the database.

WHO

The WHO section of *Who•What•When* lets you enter and locate personnel information within the program. People View lets you cross reference appointments for two people. For example, you can display all appointments that you have with your therapist, choose one appointment, and then use the zoom (F9) key to display all tasks on that day. Card File, as its name implies, is a facility for entering and reviewing personnel information in a card file format. It can be conveniently sorted by last name or company name. Card File also has an autodialer for those with lazy fingers and a modem.

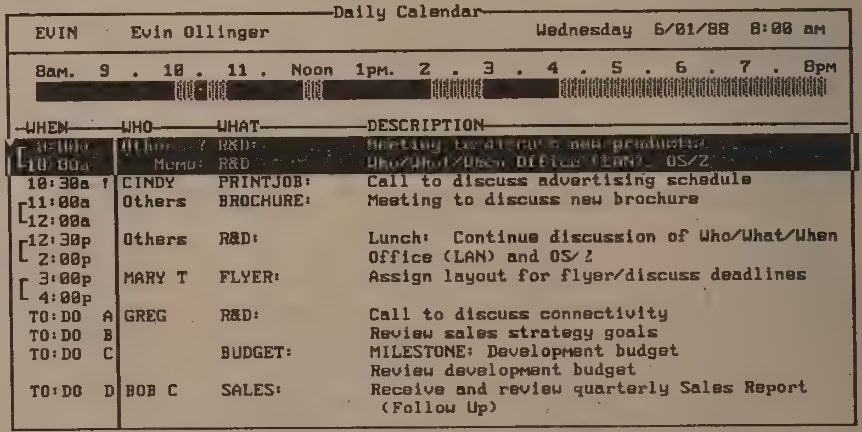
WHAT

Project management is organized in the WHAT section of *Who•What•When*, and is handled fairly simplistically. *Who•What•When* doesn't do true project management in the PERT/CPM sense. That's best left to specialized project management programs like Microsoft *Project* and *SuperProject*. *Who•What•When* does give you GANTT charts, or timelines for a main project and up to nine subprojects. This gives you a manager's-eye view of their layout and progress. Like People View, there's a corresponding Project View that lets you examine tasks specific to a given project on a day-by-day basis.

The program also has fairly extensive reporting capabilities – you can generate reports for all the whos, whats and whens in your database, in the same kinds of formats in which they occur on screen. One capability I particularly like is the Weekly Overview, which shows graphical time lines for Sunday - Saturday, highlighting each day's appointments. With the zoom (F9) key you can quickly view a day's detailed appoinment list, or slide back to the Weekly Overview.

Etc.

Who•What•When impressed me as a well conceived and designed program, but it's not without its idiosyncrasies. It has a few command quirks which seem inconsistent with normal PC conventions, but not to the point of distraction. For example, after stepping through several levels of screens, sometimes you find that hitting ESC takes you to the last screen (the current convention), and sometimes it takes you directly to the main menu. Thus, you waste keystrokes retracing your steps. Also, whenever you exit to the main menu, *Who•What•When* automatically assumes you want to go



```
                                  Daily Calendar
 EVIN    Evin Ollinger                            Wednesday  6/01/88  8:00 am

 8am.  9  .  10 .  11 .  Noon  1pm.  2  .  3  .  4  .  5  .  6  .  7  .  8pm

-WHEN-------WHO---------WHAT------------DESCRIPTION---------------------------
 [8:00a  Others  ?  R&D:              Meeting to discuss new products?
 [10:00a      Memo:  R&D              Who/What/When Office (LAN), OS/2
  10:30a !  CINDY    PRINTJOB:        Call to discuss advertising schedule
 [11:00a    Others   BROCHURE:        Meeting to discuss new brochure
 [12:00a
 [12:30p    Others   R&D:             Lunch:  Continue discussion of Who/What/When
 [ 2:00p                              Office (LAN) and OS/2
 [ 3:00p    MARY T   FLYER:           Assign layout for flyer/discuss deadlines
 [ 4:00p
  TO:DO  A  GREG     R&D:             Call to discuss connectivity
  TO:DO  B                            Review sales strategy goals
  TO:DO  C           BUDGET:          MILESTONE: Development budget
                                      Review development budget
  TO:DO  D  BOB C    SALES:           Receive and review quarterly Sales Report
                                       (Follow Up)
```

***Who•What•When*'s Daily Calendar entries automatically build Project Timecharts (GANTT). From this project overview, you can zoom into a Project Daily Calendar for specific task detail.**

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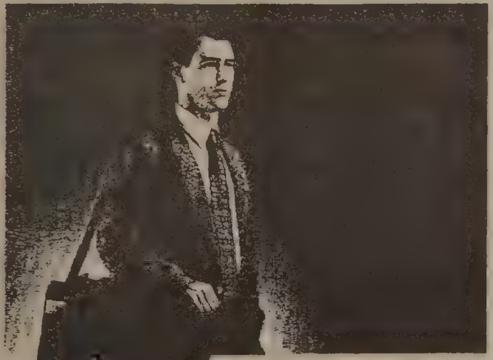

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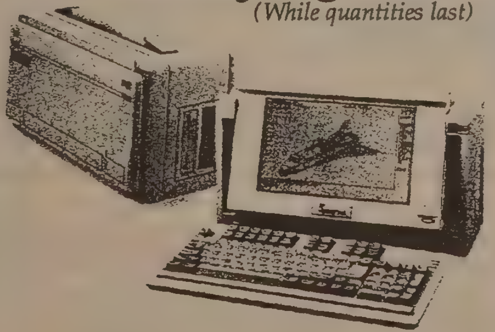

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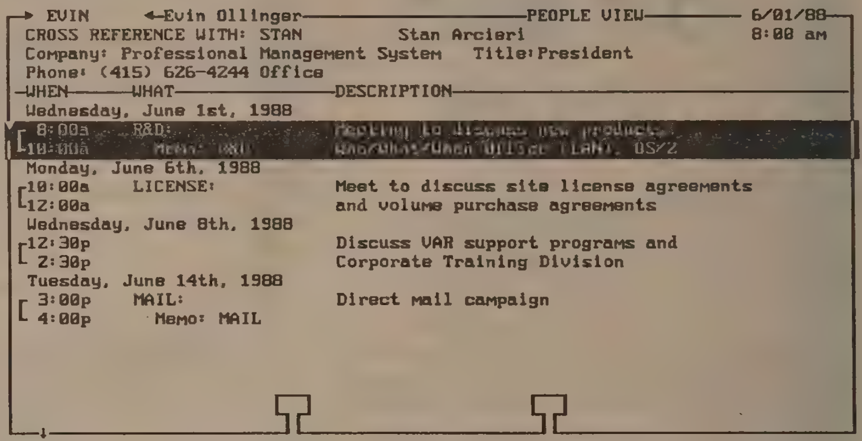
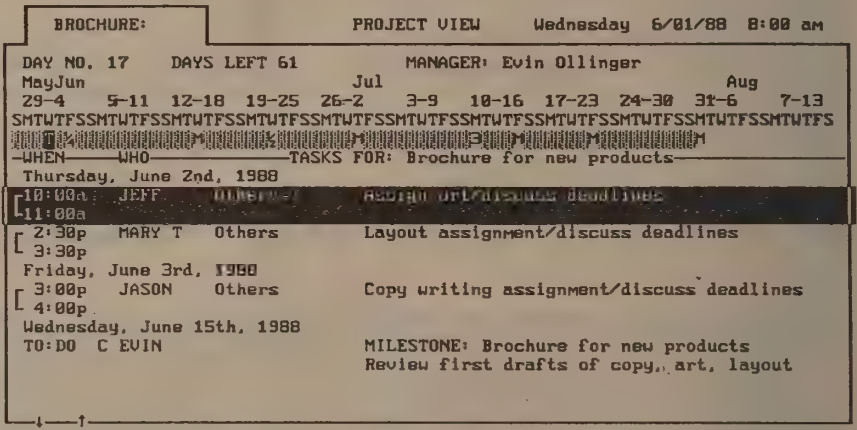


```
┌→ EVIN    ←Evin Ollinger──────────────────PEOPLE VIEW────────── 6/01/88─┐
  CROSS REFERENCE WITH: STAN          Stan Arcieri                8:00 am
  Company: Professional Management System   Title:President
  Phone: (415) 626-4244 Office
 ─WHEN─────WHAT──────────────DESCRIPTION──────────────────────────────────
  Wednesday, June 1st, 1988
 ┌ 8:00a    R&D:              Meeting to discuss new products
 └10:00a      Memo: R&D       Who/What/When Office (LAN), OS/2
  Monday, June 6th, 1988
 ┌10:00a    LICENSE:          Meet to discuss site license agreements
 └12:00a                      and volume purchase agreements
  Wednesday, June 8th, 1988
 ┌12:30p                      Discuss VAR support programs and
 └ 2:30p                      Corporate Training Division
  Tuesday, June 14th, 1988
 ┌ 3:00p    MAIL:             Direct mail campaign
 └ 4:00p      Memo: MAIL
```

Who•What•When's People View displays the people you work with, their projects, tasks and schedules. It gives you the information you need for better people management.



```
   BROCHURE:                  PROJECT VIEW     Wednesday  6/01/88  8:00 am
  DAY NO. 17    DAYS LEFT 61          MANAGER: Evin Ollinger
  MayJun                         Jul                                  Aug
  29-4    5-11  12-18  19-25  26-2    3-9   10-16  17-23  24-30  31-6    7-13
 SMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFS
 ─WHEN─────WHO──────────TASKS FOR: Brochure for new products────────────
  Thursday, June 2nd, 1988
 ┌10:00a   JEFF     Others        Assign art/discuss deadlines
 └11:00a
 ┌ 2:30p   MARY T   Others        Layout assignment/discuss deadlines
 └ 3:30p
  Friday, June 3rd, 1988
 ┌ 3:00p   JASON    Others        Copy writing assignment/discuss deadlines
 └ 4:00p
  Wednesday, June 15th, 1988
  TO:DO   C EVIN                  MILESTONE: Brochure for new products
                                  Review first drafts of copy, art, layout
```

Who•What•When's Project View displays your projects, the people involved, milestones and deadlines.

to the Daily Calendar, instead of to your last menu choice. More troubling was the fact that the program bombed my 386 clone (running DOS 3.1) in a number of bizarre and unpredictable ways, displaying an ambiguous system level error message. Since the program is still in early release, its bugs are still being shaken out, presumably.

Who•What•When uses Novell's Btrieve database engine for storing and retrieving information. Btrieve is quite reliable, and is quick at retrieving information, but very slow at storing or updating database records. According to Chronos, we can expect a network version of the program sometime in the near future.

Who•What•When is packaged in what Chronos calls a "boardroom-quality" (actually vinyl) notebook which houses the user manual and a set of forms designed to take the place of the program when you go where the computer can't. The manual is concise and well written. The forms, which Chronos calls "paperware," will help you take notes that you can later transcribe into *Who•What•When.*

If you swear by your pocket calendar, *Who•What•When* may be the program for you. It's software that will either become irreplaceable, or will simply languish on your hard disk. While it's easy to use, like any PC program, it will take a certain commitment to get over the first hump of the learning curve. But once you do, you will certainly find yourself better organized and in better command of your time.

Who•What•When is the first program I know of which combines all its features into an integrated package. While there are a number of programs that have appointment calendars, or have cardfiles with autodialers, none of them combines these capabilities as effectively as this package. *Who•What•When* is not a flashy program, it runs in text-mode, doesn't have fancy graphics and certainly hasn't stolen its "look and feel" from the Macintosh. But it definitely gets the job done. And for most executives and managers, that's the bottom line. (Chronos Software, Inc., 1500 Sixteenth St., Suite 100, San Francisco, CA 94103. 415/626-4244. Retail Price $189.) ☐

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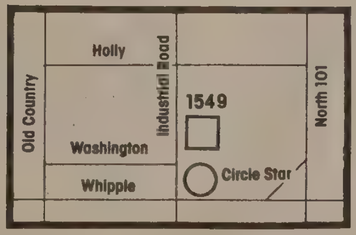

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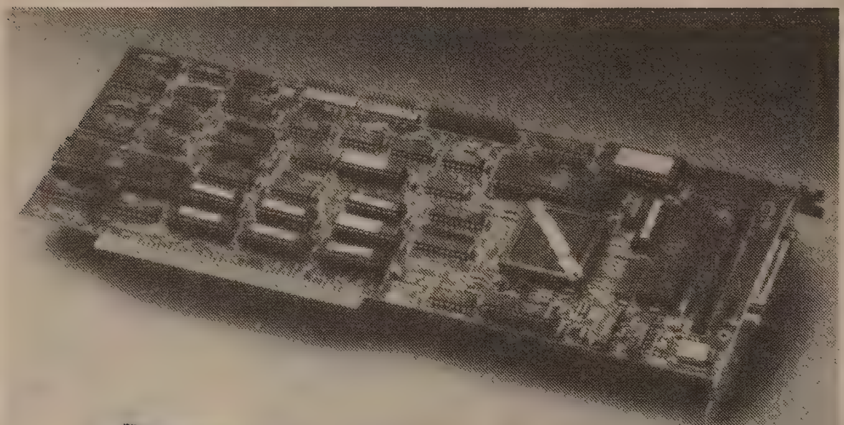
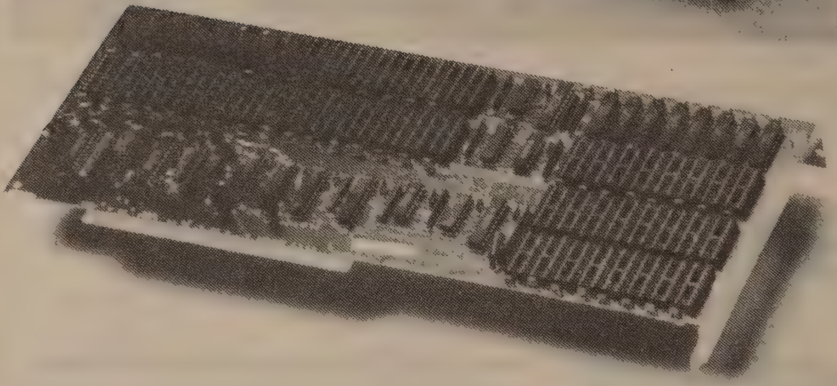




Commodore Produces 8 Megabyte Memory Expansion Board For Amiga 2000

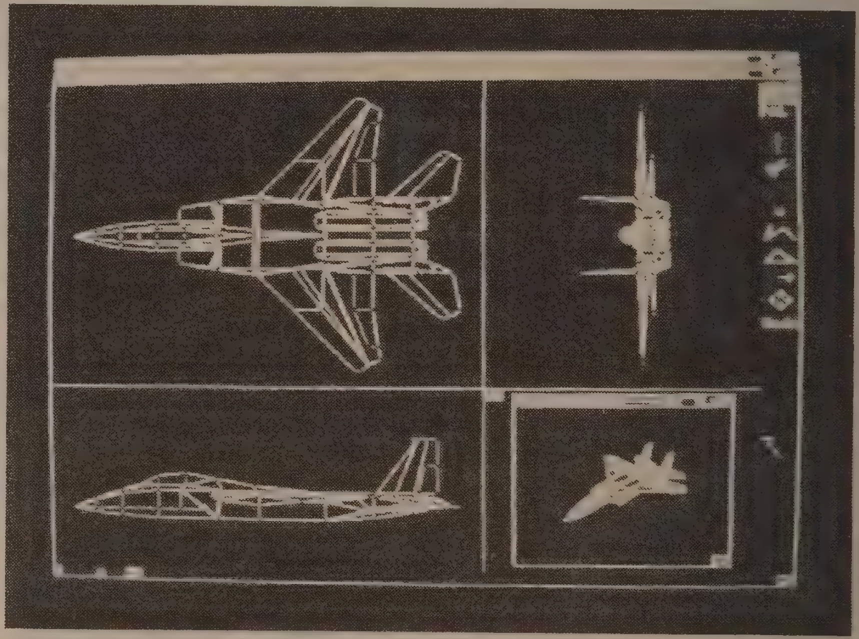
Amiga users who require a lot of dynamic memory for applications like 3D animation and graphic design can now configure up to eight megabytes of memory on an expansion board from Commodore Business Machines. The A2058 board comes with two megabytes of RAM; the user can add up to six megabytes more. The Amiga system auto-configures for the additional memory. ($795.) Commodore Business Machines, Inc. 1200 Wilson Dr., West Chester, PA 19380. (215) 431-9100.

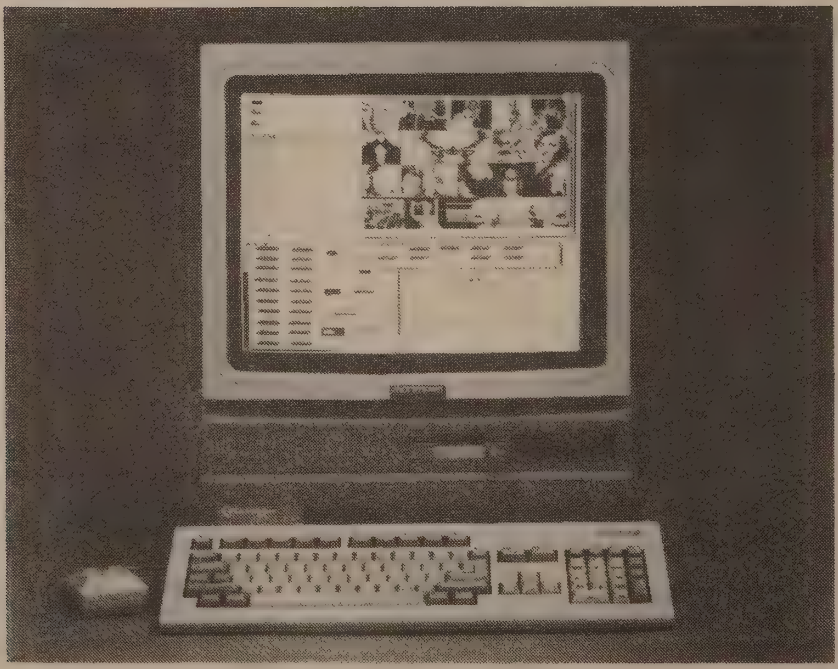
Amiga Controller Board Features Two Interfaces For Mass Storage Devices

If you need to hook up your Amiga 2000 to a storage subsystem of some kind, the new A2090A hard disk controller will help out. This board contains both ST-506 and SCSI interfaces, and provides buffered direct memory access with high speed burst data transfer. Up to two ST-506 and seven SCSI devices can be connected simultaneously. ($399.) Commodore Business Machines, Inc. 1200 Wilson Dr., West Chester, PA 19380. (215) 431-9100.

Modeler 3D Gives You The Ability To Create Geometric Shapes In A CAD-Like Environment

Objects from simple geometric shapes to complex, mathematically accurate ones, can be made with *Modeler 3D*. These objects can then be loaded in *VideoScape 3D*, a professional 3-D animation system, and manipulated as part of an animation sequence. Simple objects such as spheres and boxes are available from pull-down menus, while any object can be created with precision by using the object creation tools. Any drawing created in *Aegis Draw, Aegis Draw Plus* or *Aegis Draw 2000* may be loaded into *Modeler 3D* and a third dimension extruded with the use of one command. It may then be treated as any other object, adding points, polygons and different types of colors and shading, loaded into *Aegis VideoScape 3D,* and animated. ($99.95.) Aegis Development, Inc., 2115 Pico Blvd., Santa Monica, CA 90405. (213) 392-9972.





High Resolution 19" Monochrome Monitor From Moniterm Aids Graphics Applications

Amiga 2000 users in the fields of CAD/CAM, desktop publishing and graphic arts who want a large monochrome monitor may be interested in the Viking 1 from Moniterm. This new monitor features 1008 X 800 X 2 bits resolution, 72MHz pixel frequency and 56KHz horizontal frequency. It has a 19.6" diagonal screen and weighs 36 lbs. ($1,995.) Moniterm Corp., 5740 Green Circle Dr., Minnetonka, MN. (612) 935-4151.

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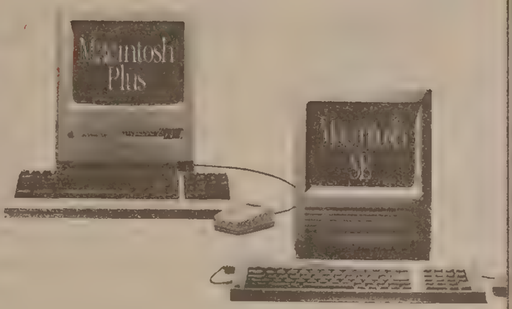

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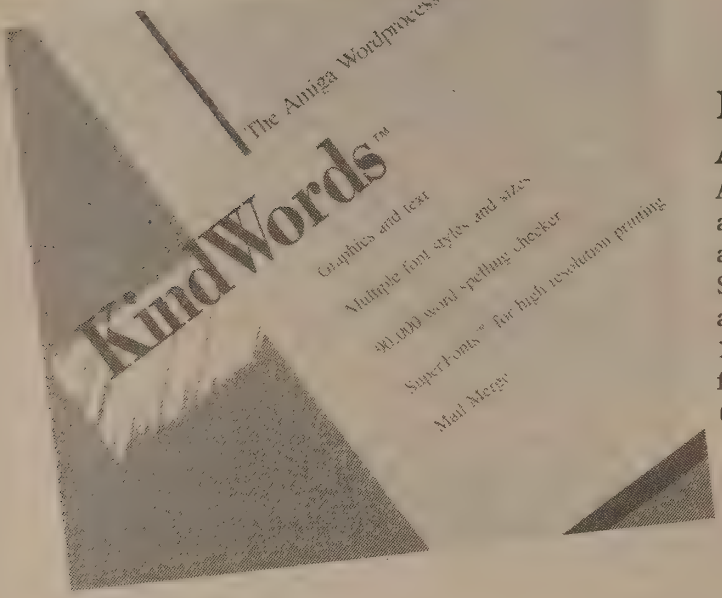
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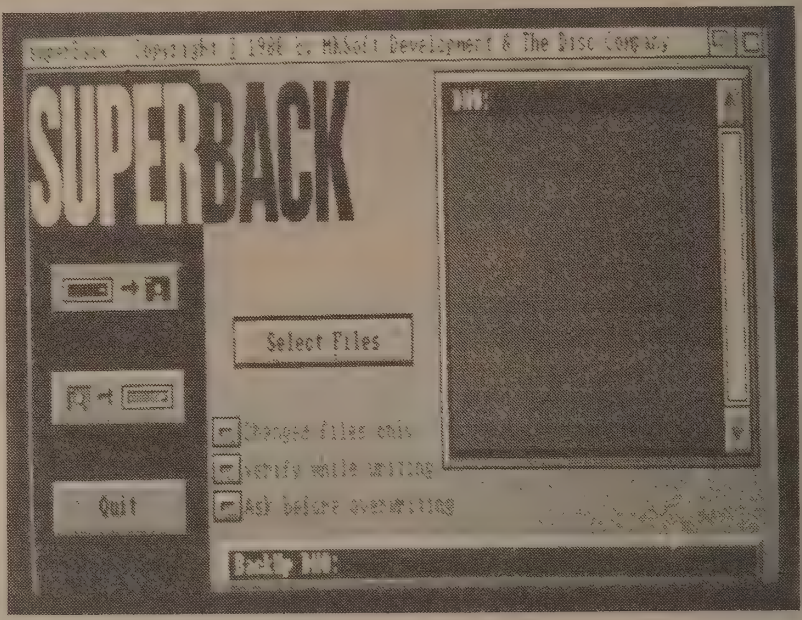
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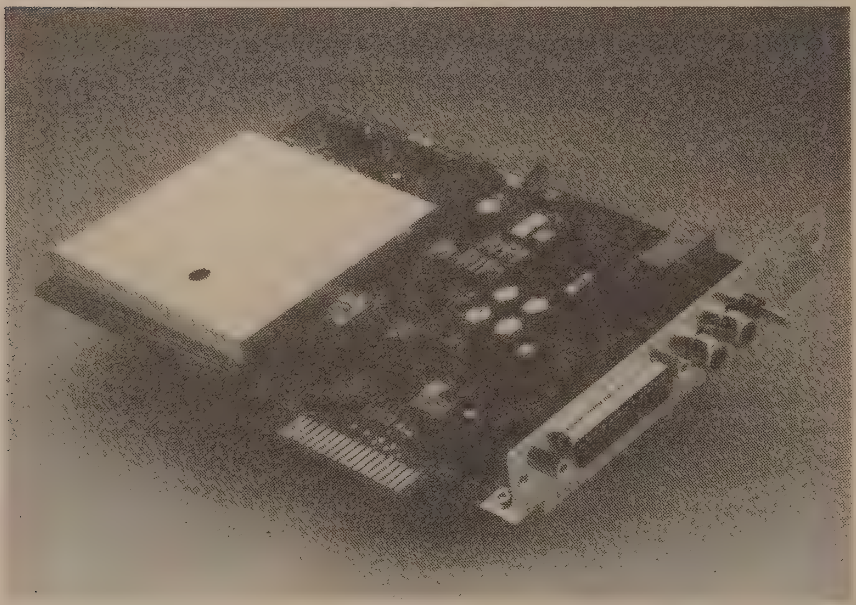
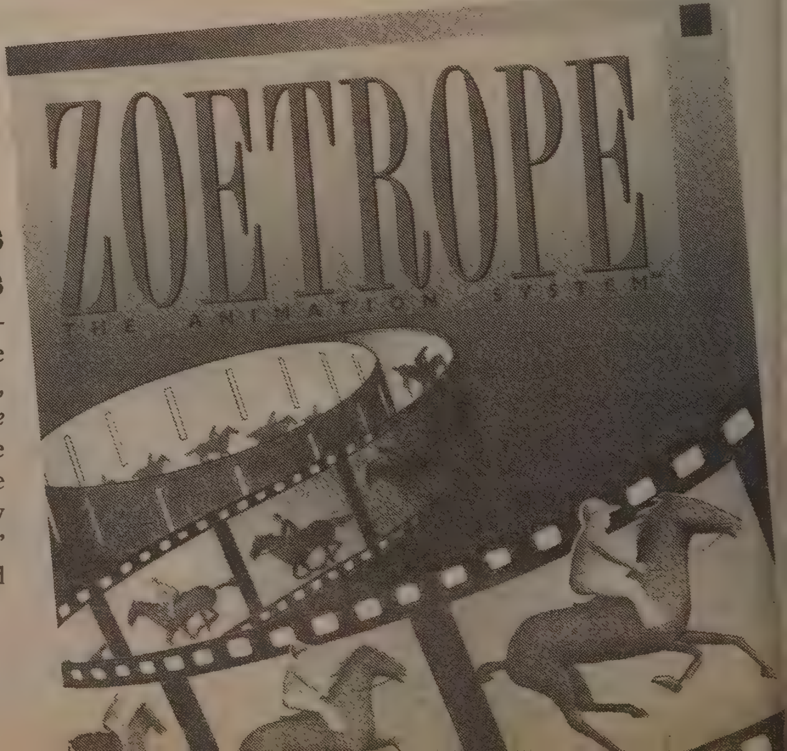


New Amiga Board Lets Users Add Titles, Graphics And Animation To Video

With the A2300 Genlock Board from Commodore, you can add graphics and text to the output of external video sources such as a video cassette recorder, video camera or laser disk player. The Genlock synchronizes output so that titles, color graphics and three-dimensional animation can be added over video images. Graphics and text can be created in any of the graphics or video software programs available for the Amiga 2000. The A2300 is available in both PAL and NTSC modes. ($399.) Commodore Business Machines, Inc. 1200 Wilson Dr., West Chester, PA 19380. (215) 431-9100.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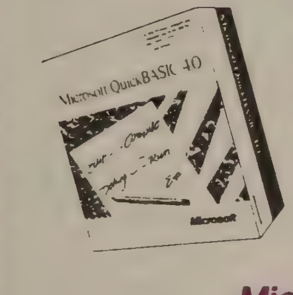

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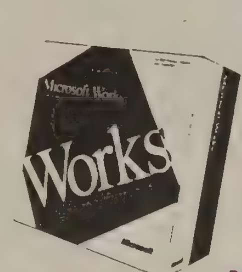

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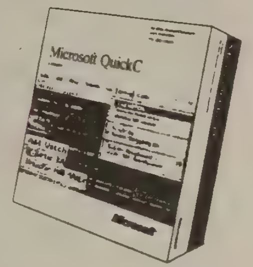

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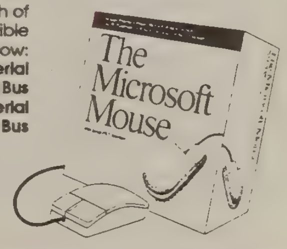

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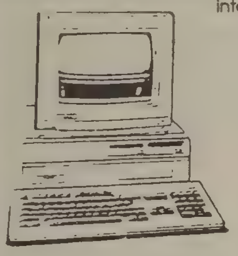

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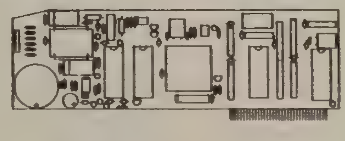

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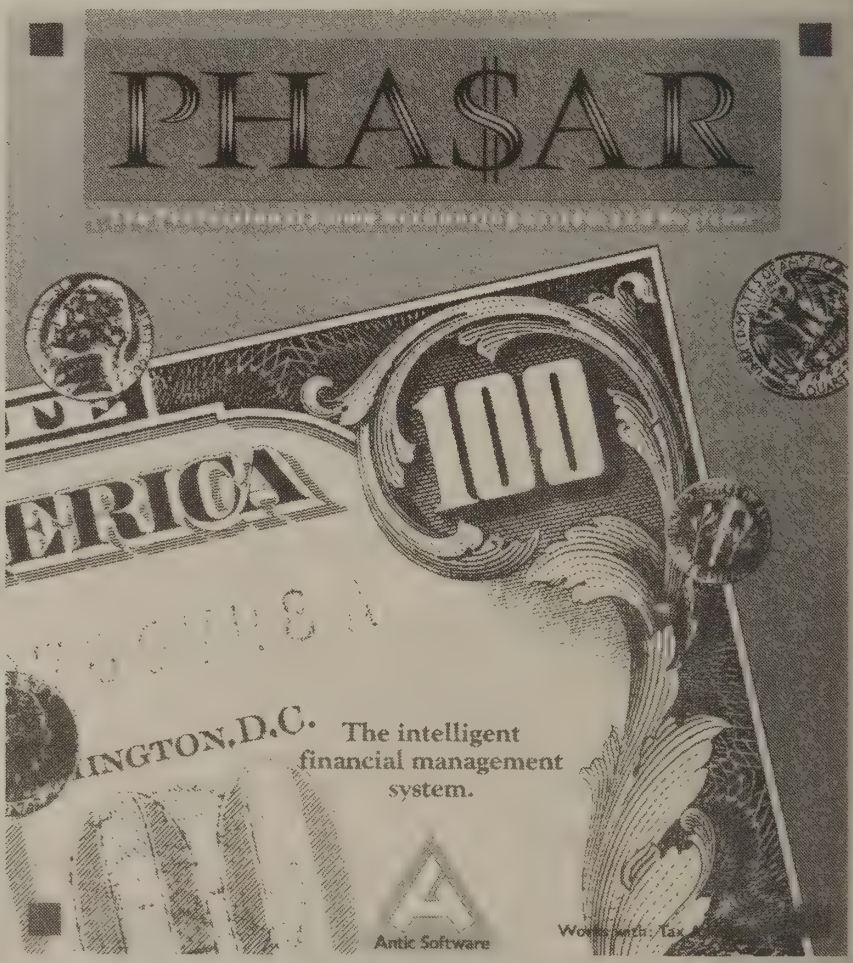
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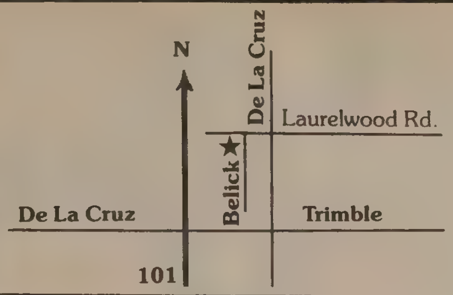

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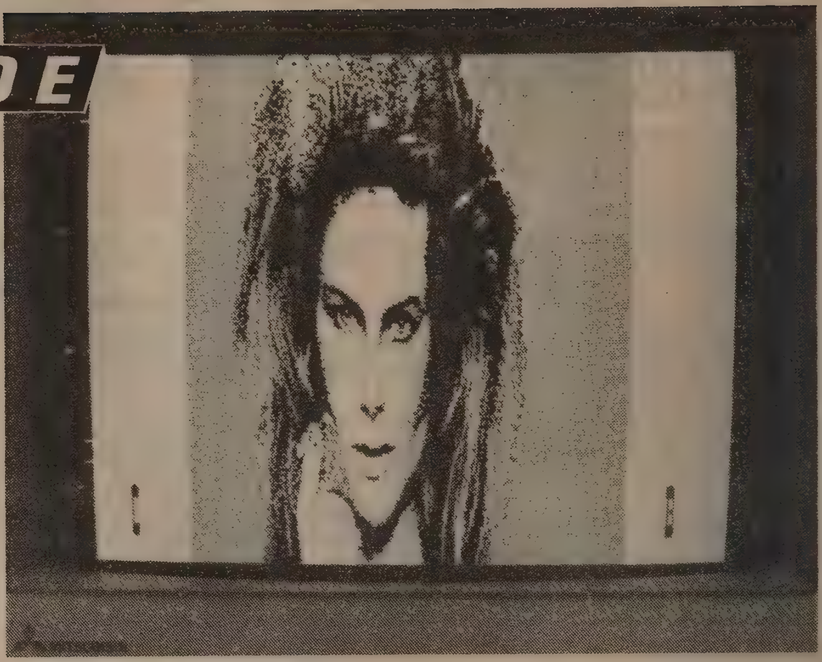
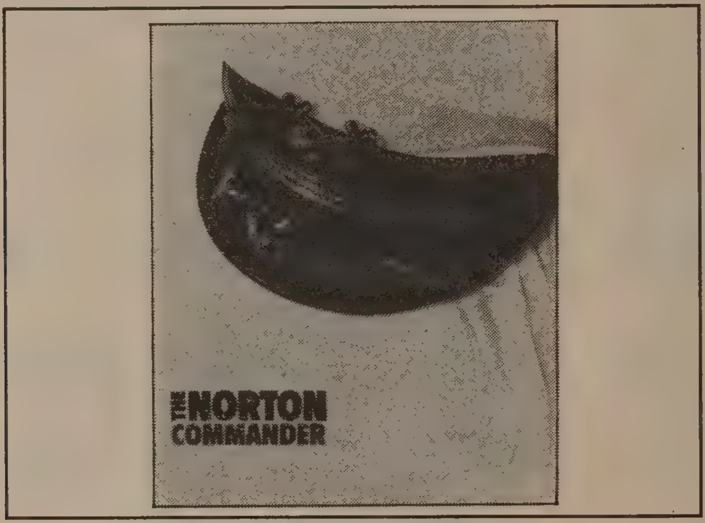


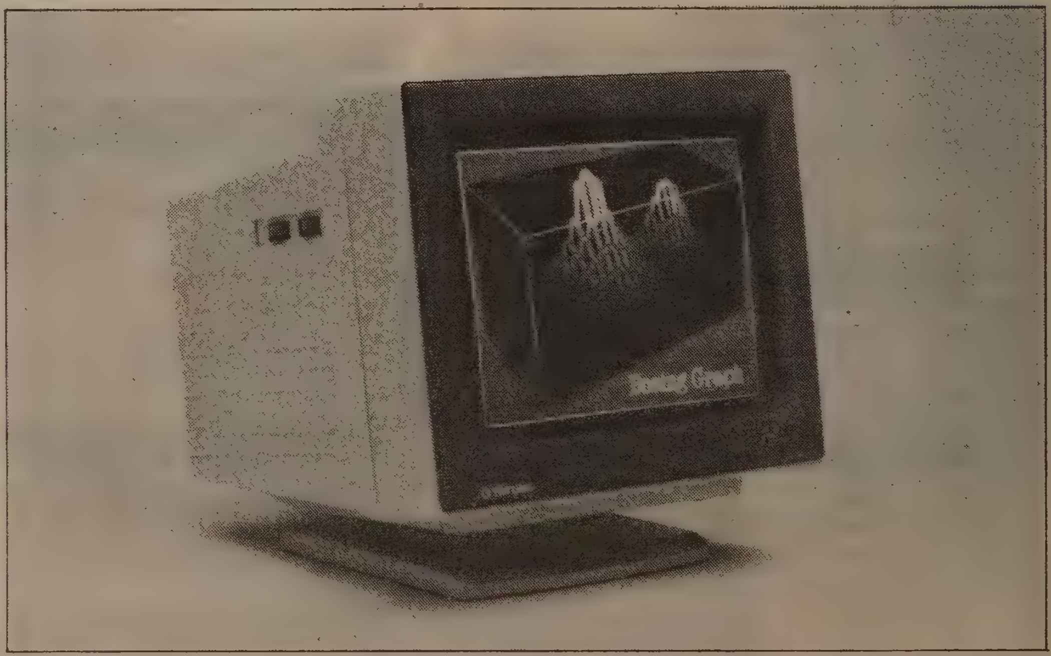
MacPaste Disk # 1001 is a set of applications that allow the user to take bit-mapped *MacPaint* files created on a Macintosh and turn them into PC files called ReadMac pictures. These pictures can then be viewed, edited and printed with *MacShow, ManyMac* and *MacBlank*. An IBM-PC or compatible with at least 128K, one disk drive and color graphics capability is required. The MacPaste disk is available for $6.00 plus a $4.00 shipping and handling fee. An additional registration fee is required after you have tried out the applications. PC-SIG, Inc., 1030-D East Duane Ave., Sunnyvale, CA 94086. (408) 730-9291.



Norton Commander Features Lotus, dBASE Viewers

Norton Commander 2.0 enables the PC user running DOS 2.0 or higher to browse *Lotus 1-2-3* and *Symphony* spreadsheets and dBASE files directly from the Commander. The *Commander* is an enhancement shell and file manager that includes an asynchronous File Find that lets users view found files in a full-screen, scrollable window, and directory tree panels that can display a hierarchical directory tree in one panel and a file listing in the other. The shell offers a flexible pull-down menu interface that organizes the program's many features into logical groups controlling directory panel layout, multifile operation, extended commands and screen control. Peter Norton Computing, 2210 Wilshire Blvd., Suite 186, Santa Monica, CA 90403-5784. (213) 453-2361.

New Monochrome Monitor Displays 64 Shades Of Gray



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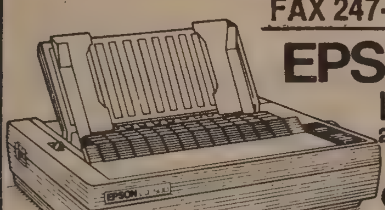

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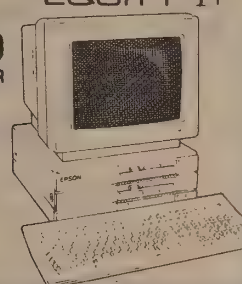

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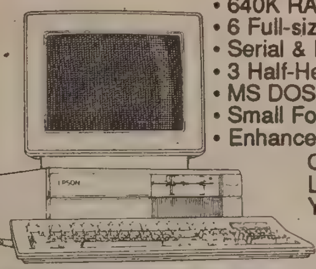

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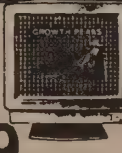

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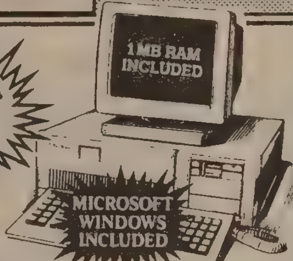

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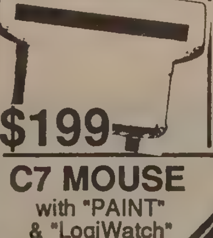

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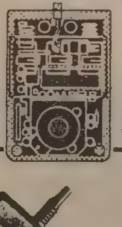

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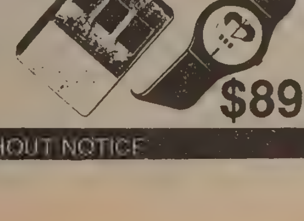

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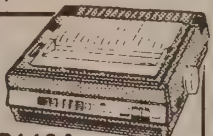

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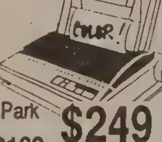

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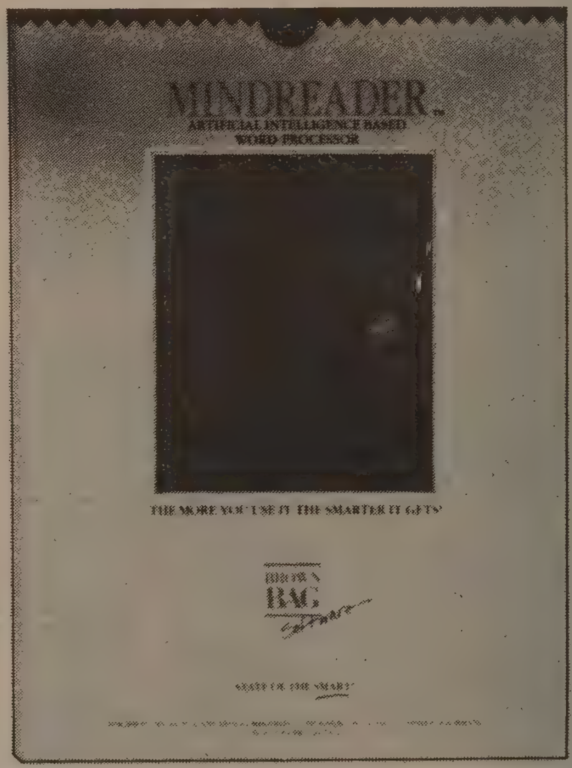
PostScript Drawing Program Released For The PC Under Windows

Adobe Illustrator, Windows Version is a PostScript-based drawing package to assist the professional and novice artist. Long a standard in the Macintosh environment, *Illustrator* now brings the power of PostScript to the PC or compatibles user. It offers such tools as auto trace, pen tool, freehand drawing, zoom, preview, constrain, scale, copy and paste, and more. Minimum requirements for *Illustrator* are 640K standard memory with 256K expanded memory, a hard disk and an EGA, VGA or Hercules Monochrome interface and display. ($695.) Adobe Systems, Inc., PO 7900, Mountain View, CA 94039. (415) 961-4400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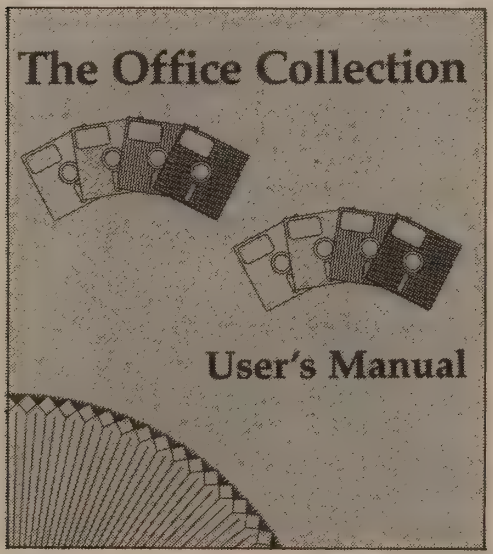
Let The Computer Read Your Mind With This AI Word Processing Program

Writing can be tedious business. If you get tired of having to think of every single word and sentence you write, just let the computer do it with *MindReader.* As you type, *MindReader* "studies" how you write and what words and phrases you use. It then offers appropriate words and phrases. You enter them with the press of a single key, or just keep typing. *MindReader* also features Mail Merge, Address Book, on-screen math, Pop-Up Calculator, line and box drawing and the popular subset of familiar *WordStar* editing commands. A voice recognition version of *MindReader* is currently being tested and will be available in mid-'89. ($89.95.) Brown Bag Software, 2155 South Bascom Ave., Suite 114, Campbell, CA 95008. 1-800-523-0764.



At About $2 Each, These Shareware Applications Offer A Lot To The Business User

For $29.95, you can receive 15 useful business programs from Info-Source, a purveyor of Shareware. Among those programs you'll find a word processing program, a database management system, a form generation application and a DOS tutorial. Others include a desktop organizer and hard disk menu system. And of course, in the typical Shareware way, if you order *The Info-Source Office Collection* and do not find anything very useful, you simply return the disks and manual without paying a cent. Info-Source, 530 Lawrence Expressway, Suite 500, Sunnyvale, CA 94086. 1-800-PC-SOURCE.

Tape Backup And External Disk Drive For Laptops Arrive From Procom

Laptop users who would like to add a disk drive or perhaps a tape backup subsystem can consider two new offerings from Procom. The Procom PLT40 offers 40Mb of backup storage and is compatible with the best selling laptop computers on the market including Toshiba, NEC HD series and Zenith portable computers. The Procom PLF360 is an external disk drive that allows the users to select 5.25" disks as well as 3.5" diskettes. The PLF360 sells for $395, the PLT40 for $795. Procom Technology, Inc., 200 McCormick Ave., Costa Mesa, CA 92660. (714) 549-9449.

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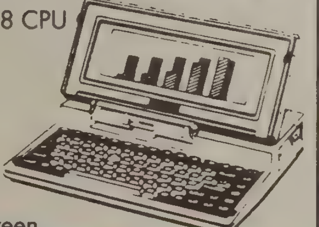

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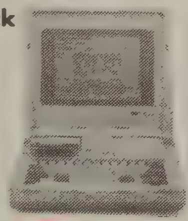

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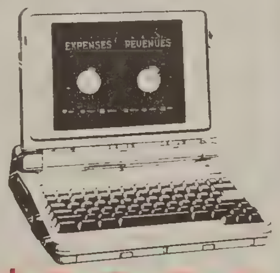

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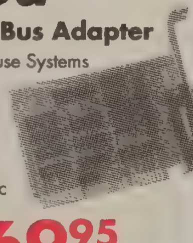

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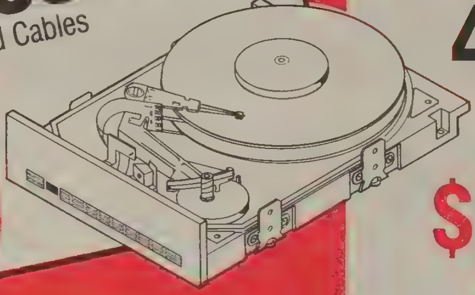

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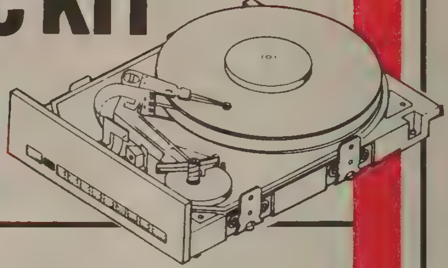

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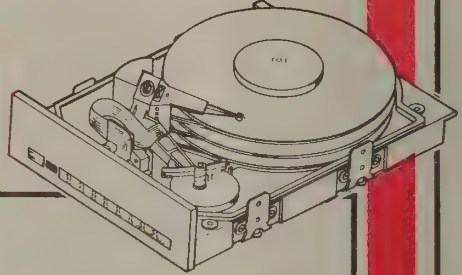

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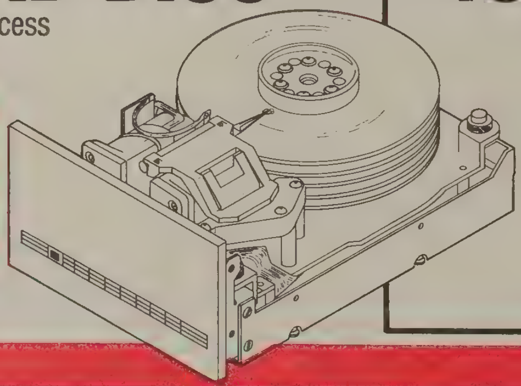

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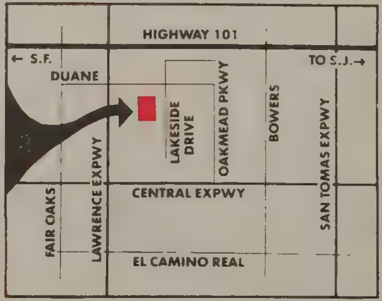
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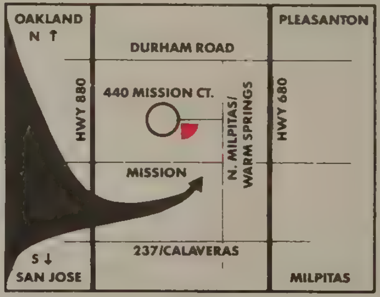
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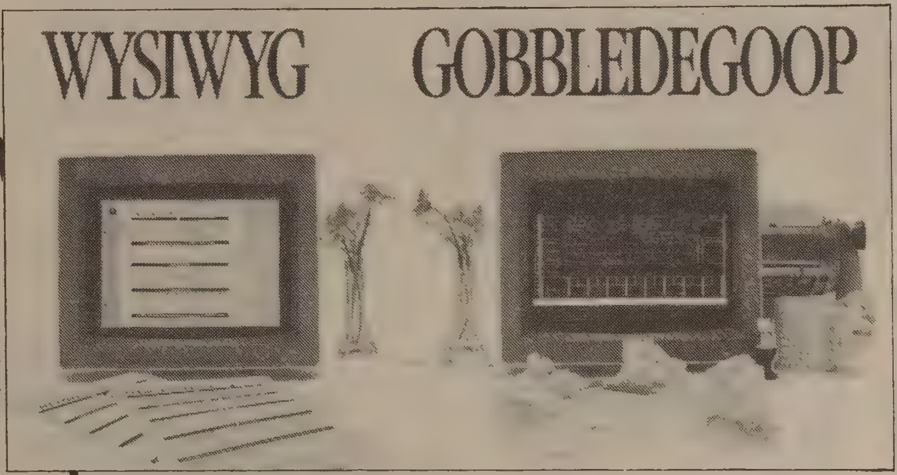

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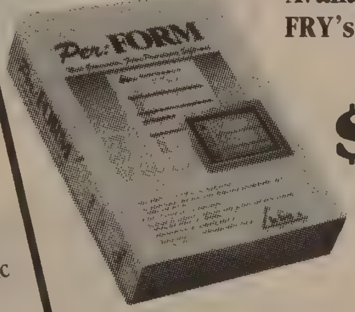

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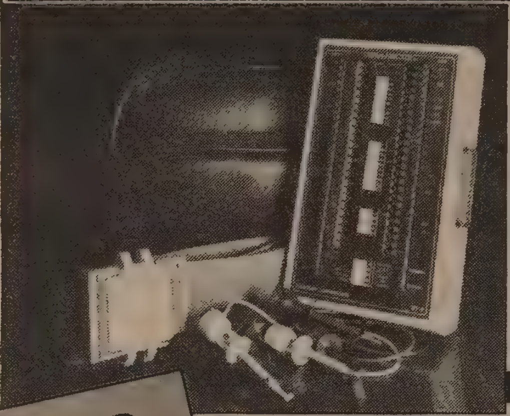

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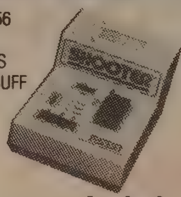

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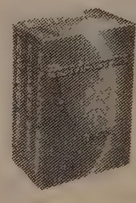

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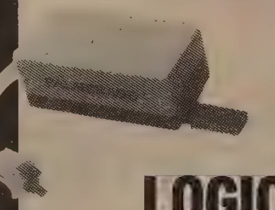

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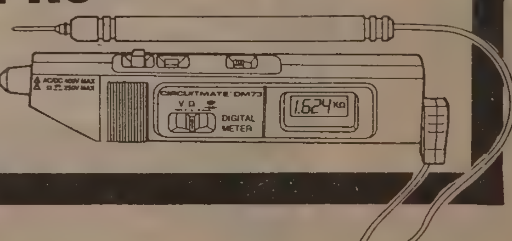

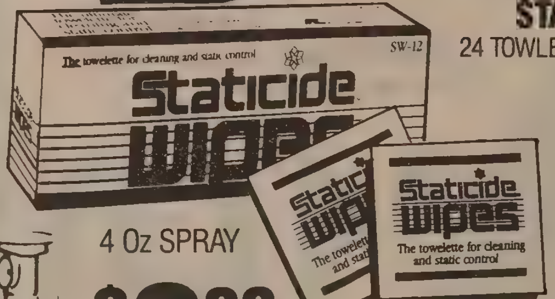

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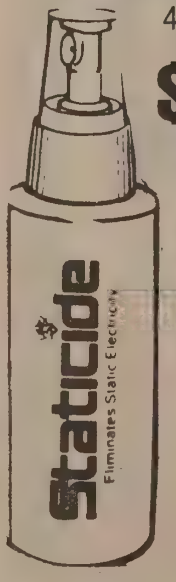

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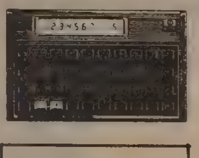

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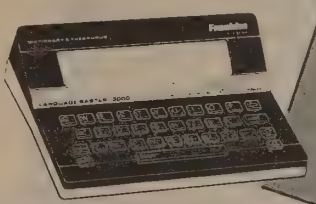

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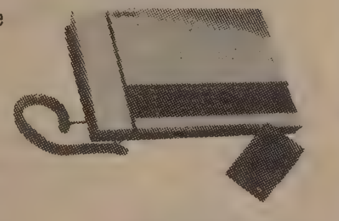

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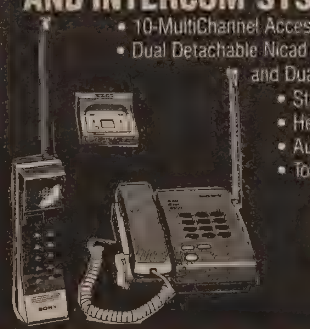

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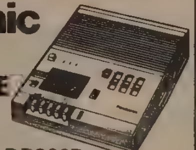

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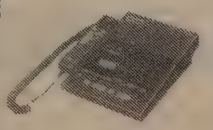

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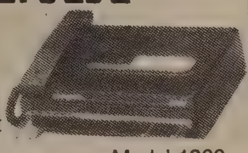

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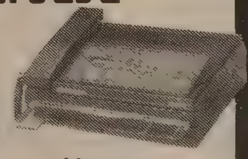

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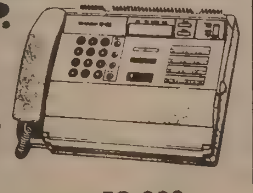

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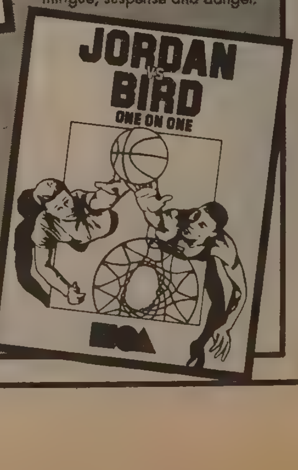

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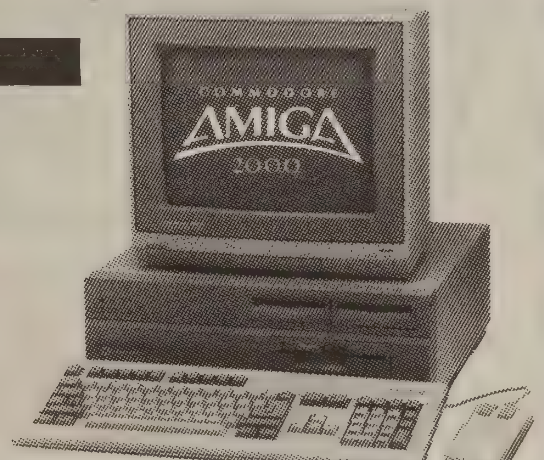

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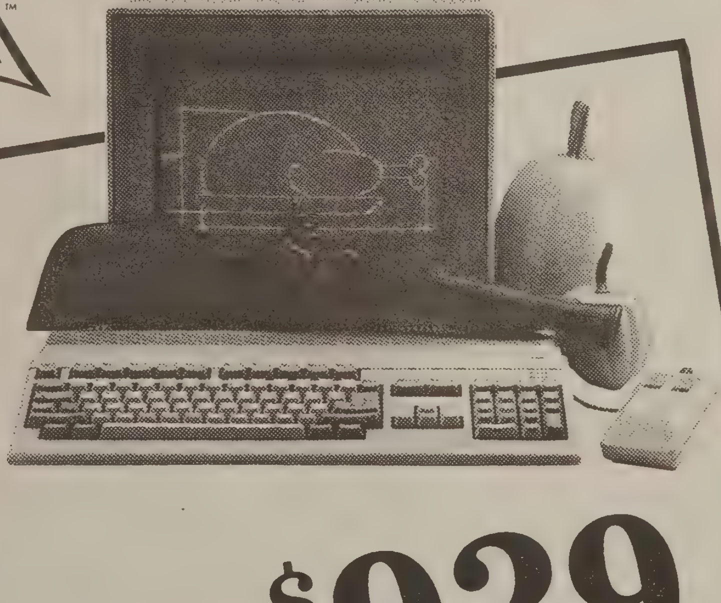

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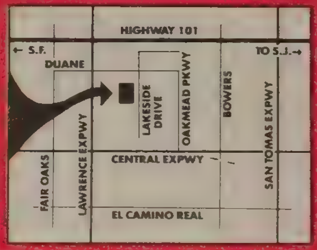
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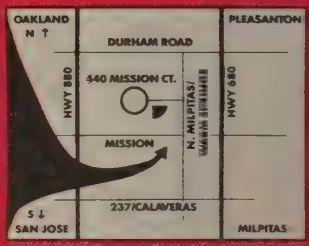
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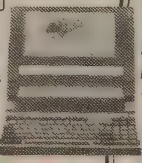

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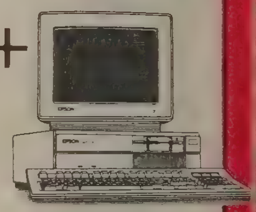

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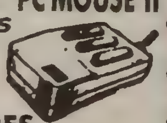

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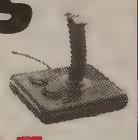

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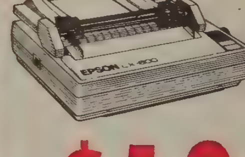

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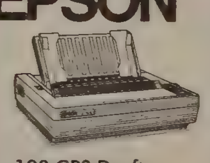

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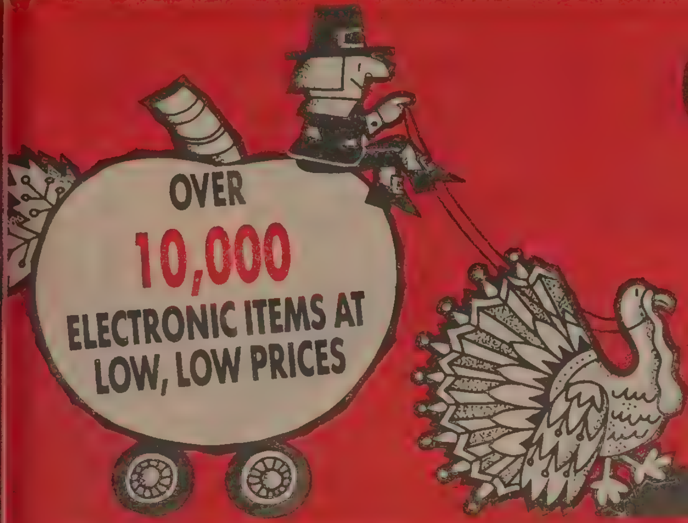

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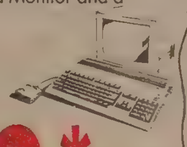

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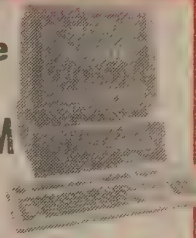

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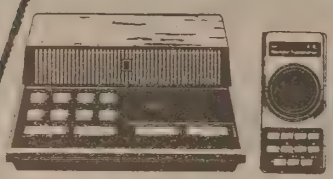
Now you can use the power of your computer to control all the lights and appliances in your home! All without tying up your computer. In the "Install" mode, you select a room in which to install graphical icons which represent what you want to control. Then in the "Operate mode" you select a room in which the light or appliance you wish to control is located. You use the joystick to point to the icon representing the light or appliance you wish to control. Then point and click to select whether you want to turn in on or off, Today, Tomorrow, Everyday or on Specific Days and then set the time you want it to go on or off.



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Controls your lights and applications from any telephone, wherever you are! Transmit control signals with your 3 digit security code to control up to 8 lights & appliances

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MINI CONTROLLER

Instantly controls 8 lights & appliances throughout the house with the push of a button— From one convenient location

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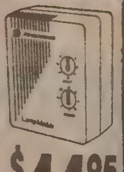

Receives signals from the timer or mini-controller to turn lamps on and off anywhere in the house. Full range dimming is possible from X-10 manual controllers.

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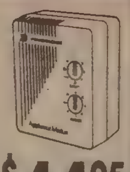

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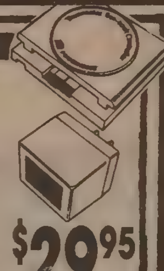

Mounts on the wall under your existing thermostat & plugs into the appliance module Works with any thermostat so you can automatically set back heating or air conditioning using the timer, or remotely turn up heat/a.c. before you get home using the telephone responder.

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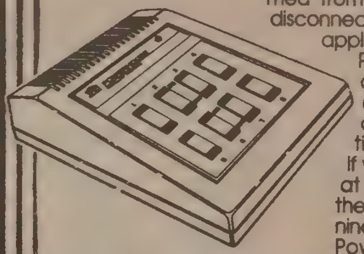
COMPUTER INTERFACE



The Home Control Interface is a very sophisticated timer which is programmed from your computer and then disconnected. Simply plug lamps and appliances into the modules. Program different events for different days. You can even program your lights to dim at a predetermined time.

If you don't have a computer at home, you can program the interface at work, pop in a nine volt battery and bring the Powerhouse into your home! The interface, available for IBM, Mac, Apple and Commodore comes complete with software and connecting cable. After programming, it can be disconnected, to free up the computer for everyday uses.

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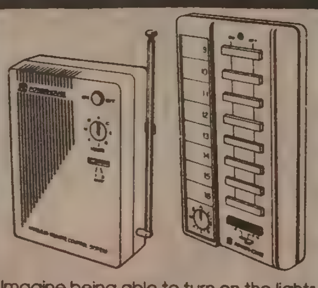
The Ultimate Remote Control



Imagine being able to turn on the lights in your house from your car as you enter your driveway. You'll never have to enter a dark house again. You can keep a Transmitter by the bedside to turn on all the lights if you hear a suspicious noise at night. You can mount a Transmitter on a wall and have one in every room to control any light or appliance from any room in your house.

$39.95

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Replaces your existing indoor wall switch to control important indoor or outdoor lights: hallway, porch, flood lights etc..

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Tower Power – Master Piece® Remote.

This unique surge suppressor is specially designed for personal computer users whose CPU's are not on the desktop, or are built into special workstations. Master Piece Remote organizes and protects your computer with all the features you'd expect in a top quality surge suppressor: five outlets, individual and master switching, surge suppression, noise filtering, static protection, and modem surge suppression.

It comes in two parts: an Outlet Strip that hides behind your desk, and a Remote Control that keeps your switches (and a handy digital clock) in easy reach.

COMPUTER
MONITOR
PRINTER
AUX 1
AUX 2
MasterPiece REMOTE

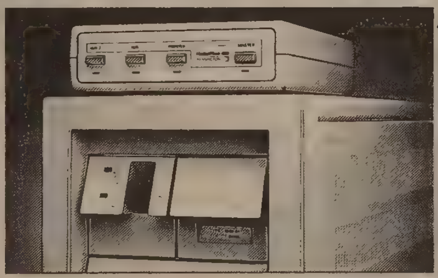
$109⁹⁵

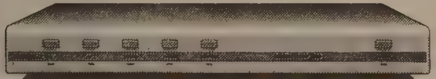
Model 6210B

Tower Power – Master Piece® 400.

This compact surge suppressor is specially designed for personal computer users whose CPU's stand beside the desk, like the IBM PS/2 Model 60 and Model 80. Sized to fit on top of your CPU tower, Master Piece 400 replaces your computer's power cord and gives you three extra outlets with individual and master switching, surge suppression, noise filtering and static protection. And Master Piece 400;s Aux2 switch is wired independently of the Master switch for separate control of one peripheral, like a modem or external tape backup.

Model 62110 **$109⁹⁵**





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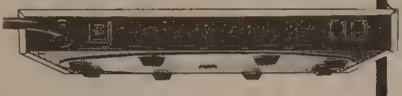

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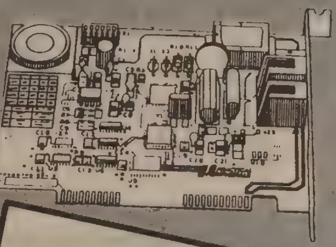

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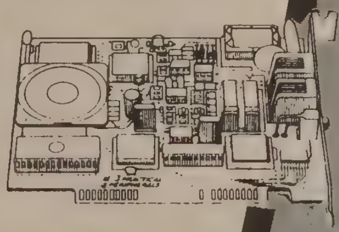

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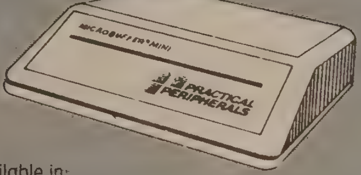

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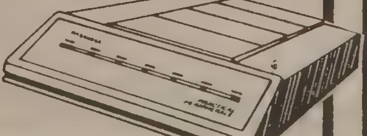

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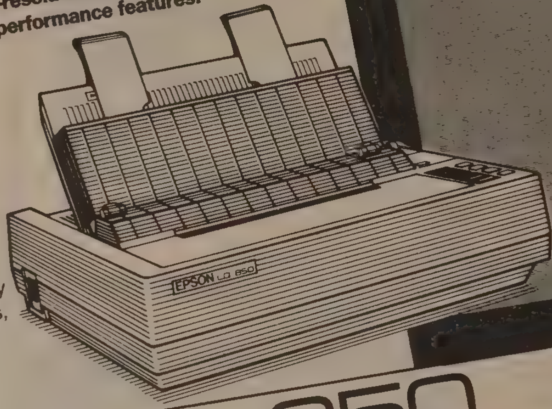
- In draft mode or letter quality mode, the LQ-850 runs at a surprisingly quiet 55 dB noise level
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts, and pitch
- The LQ-850 is backed by Epson's one year limited warranty



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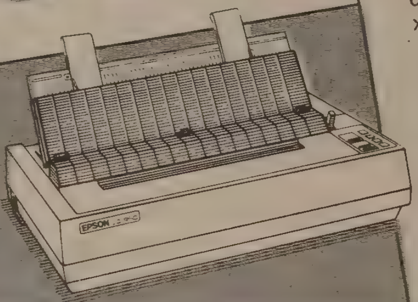

LQ-950

A member of the renowned Epson LQ-series, the mid-size LQ-950 furthers Epson's leadership in Letter Quality printers. Combining proven 24-pin technology, advanced paper handling and the capability to print graphics horizontally in "landscape" format on 11" wide paper, without additional software, the LQ-950 occupies only slightly more desk space than narrow-carriage printers.

Superb Letter Quality Resolution
The LQ-950 prints crisp text and presentation-quality graphics up to 360 x 360 dpi resolution.

Paper Handling Made Easy
SmartPark™ features let you switch paper formats without removing hardware or paper; eliminate paper waste and accurately adjust top-of-form position.

Fast Performance
The LQ-950 prints 264 characters per second (CPS) in draft mode; 88 CPS in Letter Quality mode.

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- 88 Characters per second in Letter Quality mode for enhanced, high-resolution characters
- In draft mode or letter quality mode, the LQ-1050 runs at a surprisingly quiet 55 dB noise level
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts and pitch
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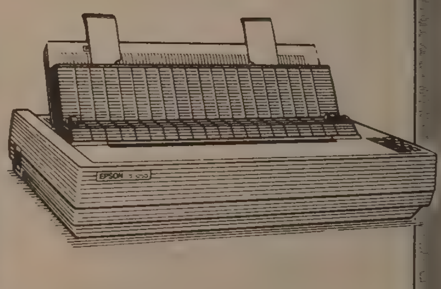

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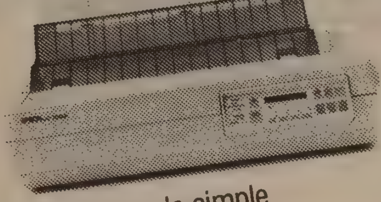
LQ-2550



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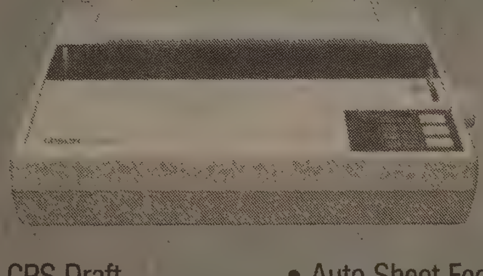

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- Push Feed Tractor
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9-PIN DOT-MATRIX PRINTER

The DFX-5000 is a high-speed, high-volume, dot-matrix printer for micros, minis and mainframes. Designed to perform in demanding printing environments, the DFX-5000 efficiently executes big printing jobs at near line printer speed. Two separate paper paths, rear feed and front bottom feed, provide enhanced flexibility. A front control panel allows access to advanced SmartPark™ paper-handling features.

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Product Features:
- Wide-carriage, 9-pin, impact dot-matrix printer.
- Prints 533 CPS in Super-Draft high-speed utility mode; 480 CPS in draft mode; 80 CPS in Near Letter Quality.
- High-speed line feed takes just 17 milli-seconds, feeding 10 inches of paper every second
- Durably built for demanding data processing environments.
- Dual push tractor system features two separate paper paths available at the touch of a button. Eliminates the manual changing of a single paper path.
- SmartPark paper-handling feature allows changing paper formats and paper paths without removing paper. One-touch selection of front and rear paper paths.
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- Features full software compatibility with industry standard Epson FX control codes.
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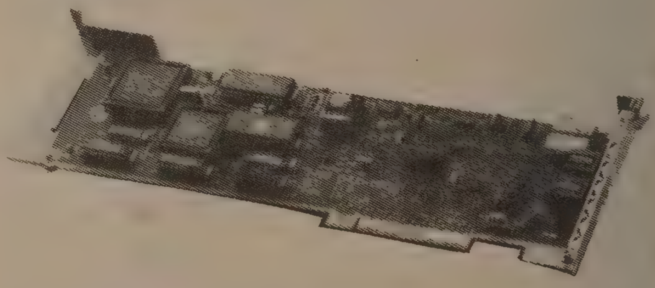
If you are looking for VGA capability for your 286 or 386 based PC or PS/2 25/30, consider The Paradise VGA Plus 16 Card. This add-in card is completely hardware and software compatible with IBM's implementation of VGA. It supports a 16-bit datapath and BIOS to provide greater performance for users of 16-bit AT-class systems. It also supports up to 800 X 600 resolution with 16 on-screen colors, 640 X 400 resolution with 256 on-screen colors, 132-column mode, and all pre-VGA standards including Hercules monochrome graphics. A proprietary AutoSense feature detects the peripheral and memory configuration of an AT or 80386-based system to determine whether the VGA Plus 16 Card can safely run a 16-bit video BIOS in that configuration. Includes a three-year warranty. ($499.) Western Digital Imaging, 800 East Middlefield Road, Mountain View, CA 94043, (415) 960-3353. Ext. 82551.



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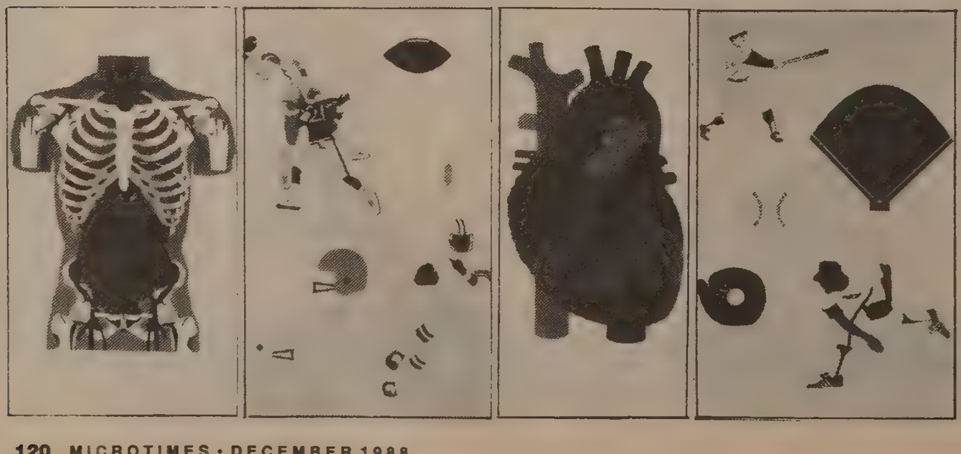
The Hook-Up PS/24 internal modem from Computer Peripherals is the company's first PS/2 compatible modem. It fits into a Micro Channel expansion slot on IBM PS/2 models 50, 60, 70 and 80 and compatible computers. The Hook-Up comes with easy-to-use proprietary telecommunications software and is guaranteed unconditionally for parts and labor for two years. CPI, 667 Rancho Conejo Blvd., Newbury Park, CA 91320. Call Mike Mock, (805) 499-5751.



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Users of clip art now have four new categories of art to choose from from Micrografx: Anatomy Sports and Recreation, Business Forms and Headline Typefaces IV. Bundled free with each Clip Art library is Micrografx *Portfolio*, a program that lets you select a ClipArt symbol and copy, print or save the symbol in a separate file. This enables the art to be brought into other applications such as Aldus *PageMaker*, Xerox *Ventura Publisher* and NBI *Legend*. Micrografx, 1820 N. Greenville Ave., Richardson, TX 75081. (800) 272-3729.

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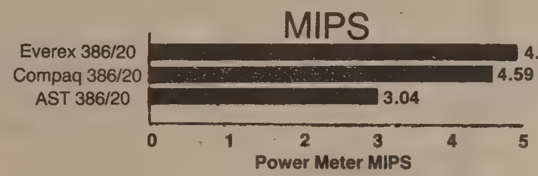

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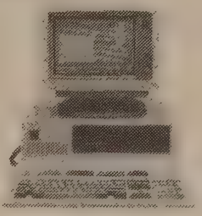

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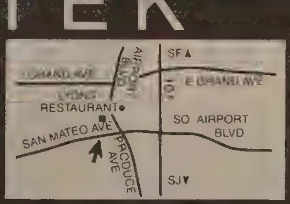

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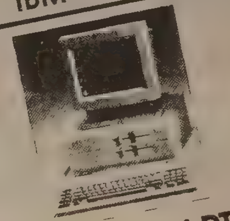

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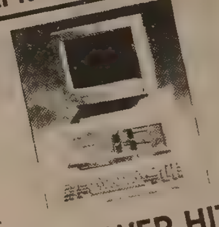

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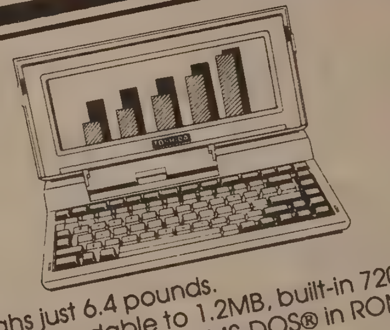

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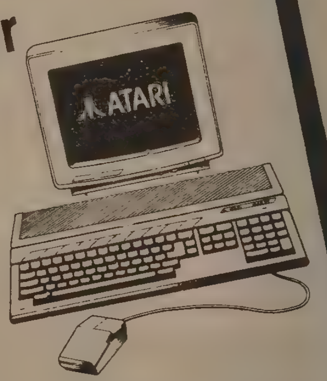

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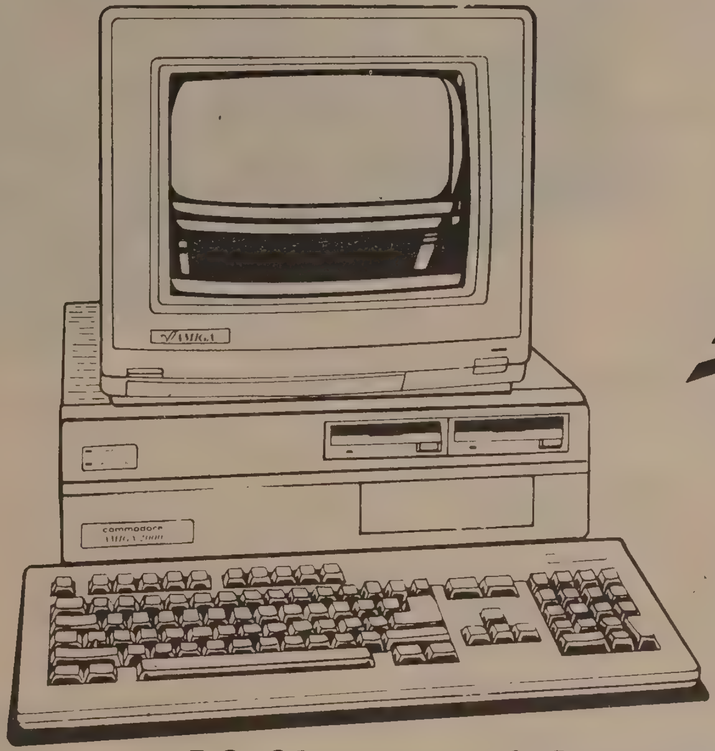

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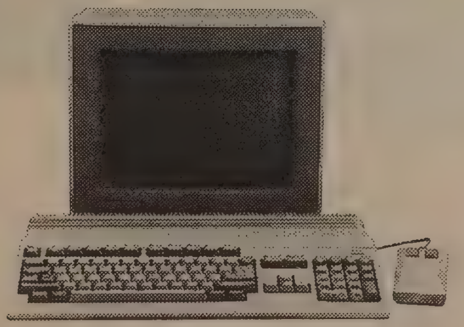

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2. Deluxe Music with songs disk
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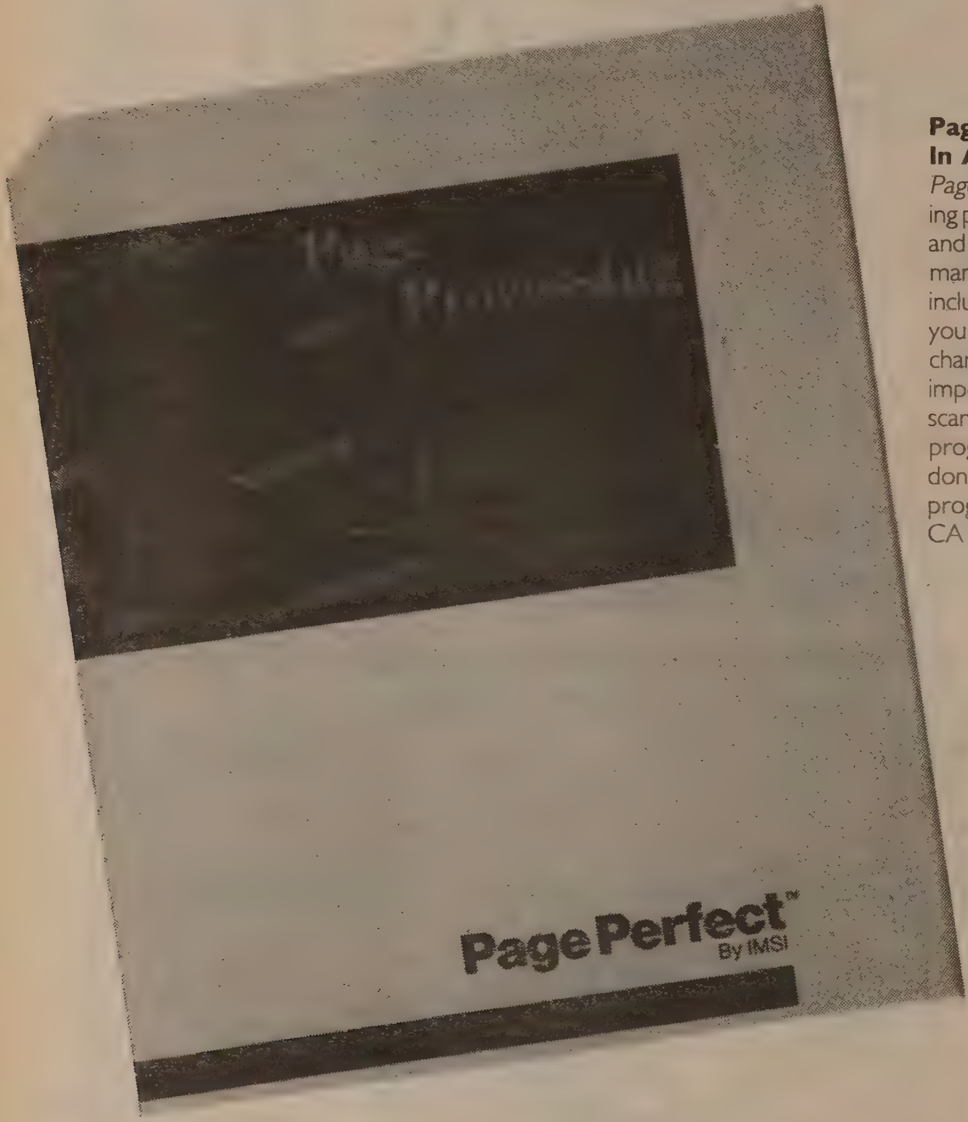
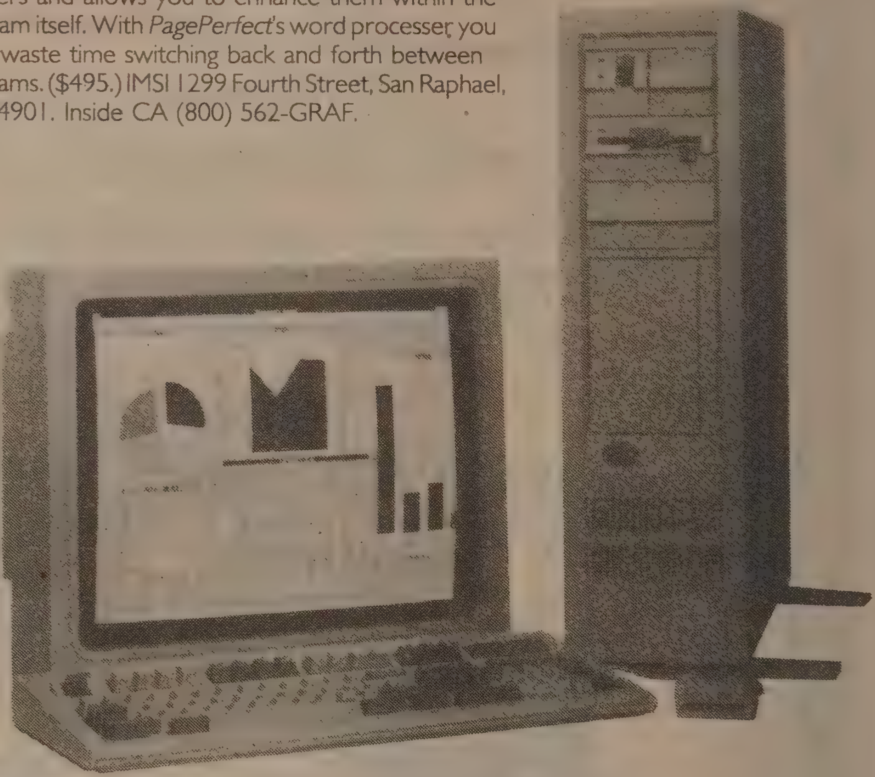
Three Dimensional Modeling From Silicon Beach

Super 3D from Silicon Beach Software allows you to take two-dimensional objects on the screen and fill them out into three dimensions. Once the object is three dimensional, you can zoom in and out, rotate the model and render it as wire frame or with hidden surfaces removed. You can shade your model by specifying the location and intensity of up to four light sources. *Super 3D Enhanced* works on the Mac II and allows for the use of color. *Super 3D* $295. *Super 3D Enhanced* $495. Silicon Beach Software 9770 Carroll Center Road, Suite J, P.O. Box 261430, San Diego, CA 92126. (619) 695-6956.



PagePerfect Provides All Aspects Of DTP In An Inegrated Package

PagePerfect from IMSI is an integrated desktop publishing package that includes word processing, page layout and composition, typography, graphics capabilities, file management and utilities. *PagePerfect* lets you use the included professionally designed style sheets or create your own. It only takes a single keystroke to make style changes throughout the entire document. *PagePerfect* imports graphics from popular graphics software or scanners and allows you to enhance them within the program itself. With *PagePerfect*'s word processer, you don't waste time switching back and forth between programs. ($495.) IMSI 1299 Fourth Street, San Raphael, CA 94901. Inside CA (800) 562-GRAF.



Easy-DOS-It Organizes Your Software

Easy-DOS-It from BMS Computer Inc. is a hard disk organizer and DOS shell. It allows you to set up a menu numbering the applications on your hard disk. You then simply choose a number to get your application going. It allows an unlimited number of user-defined menus and sub-menus. It also allows users to create help screens. Its DOS features include DOS command entry without leaving *Easy-DOS-It* and pre-defined DOS-menus, sub-menus and help screens. BMS Computer Inc., 375 North Wigit Lane, Suite 210, Walnut Creek, CA 94598. (415) 938-2620.

Easy-DOS-It!®
MASTER MENU PROGRAM
A Complete Software

Viking I Monitor Enhances Use Of Windows 386

The 19" Viking I monitor from Moniterm now comes with a software driver for Microsoft *Windows 386* that supports a resolution of 1280 x 960. *Windows 386* allows 386 machines to run several "virtual" machines in a multitasking environment. The Viking I's large screen area not only allows several programs to be on the screen at the same time, it also keeps them highly readable. The EGA Viking I can also be used for non-386 machines such as the IBM PC/AT and IBM PS/2 models 50 and 60. ($2,395). Moniterm Corporation, 5740 Green Circle Drive, Minnetonka, MN 55343. (612) 935-4151.

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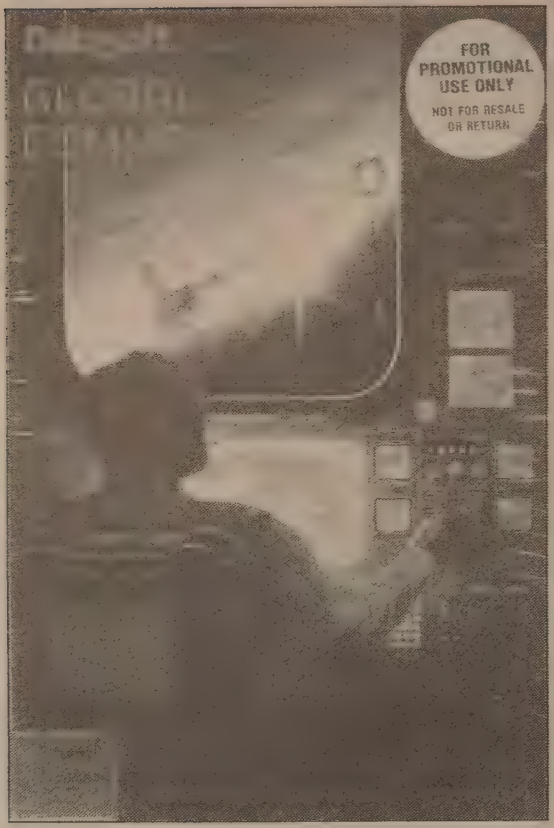
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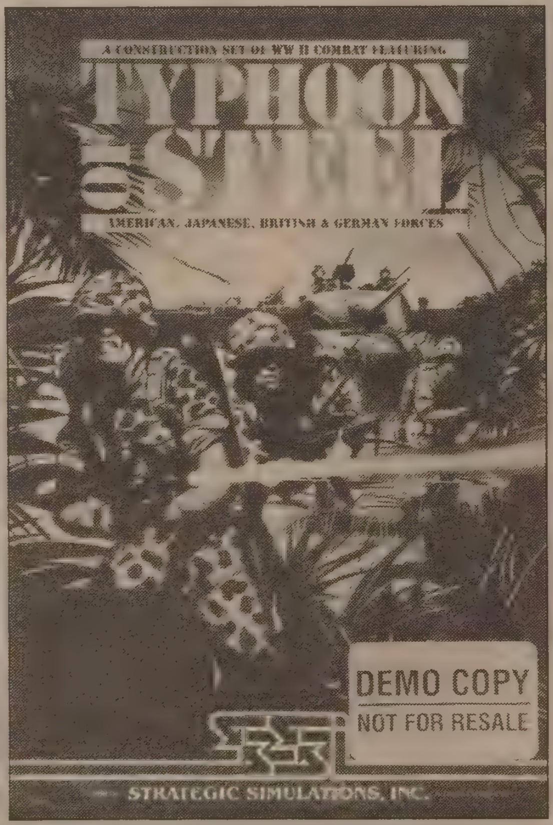
World War II may be long gone, but you can relive its famous battles and fight a few of your own, on three fronts, with *Typhoon of Steel*. You do battle with the Japanese and German enemy in the Pacific Theater, the Asian Theater and the European Theater. This game includes nearly every ground weapon used in those theaters—tanks, tank destroyers, mortars and machine guns. Pillboxes, mine fields, dragon's teeth, flamethrowers and naval gun support are also included. You choose to simulate a single battle or an entire campaign. In a campaign, it's you against the computer. In a battle, you can fight the computer or another player. The ultimate objective in the campaign is to fight and win as many battles as possible before the war ends. For Apple II+, IIe, IIc and IIGS. Strategic Simulation, Inc., 1046 N. Rengstorff Ave., Mountain View, CA 94043. (415) 964-1353.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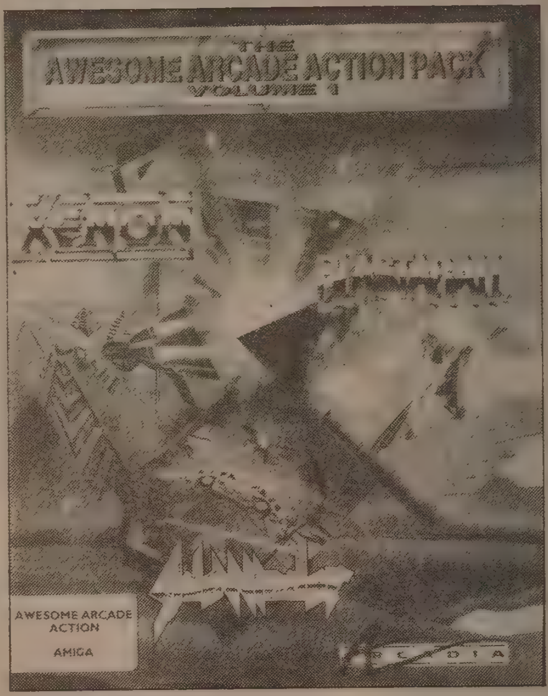
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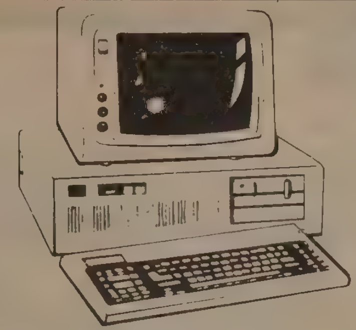

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- Monographics system

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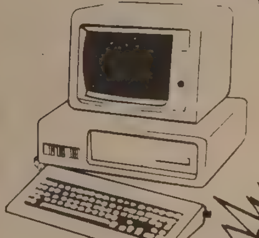

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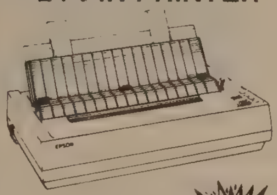

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The mid-size LQ-950 is a 24-pin, Letter Quality printer with outstanding performance features.

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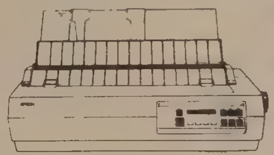
- SelectType front control panel for push-button ease of operation
- Epson's one year limited warranty

EPSON
LQ-2550
24-PIN PRINTER



Epson's advanced LQ-2550 is a powerful and versatile printer delivering superior print quality and paper-handling performance over a full range of business printing needs.

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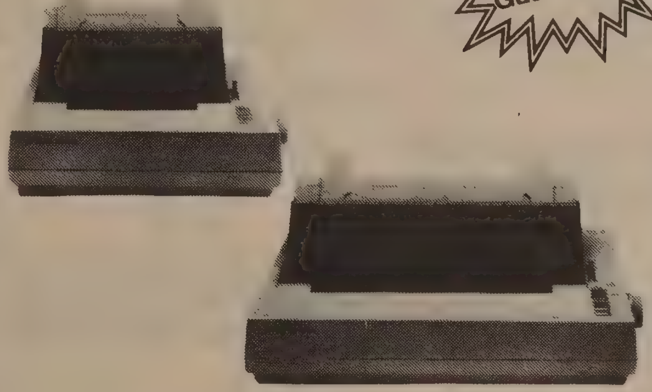

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Epson's remarkably quiet LQ-850 and LQ-1050 are fast, 24-pin dot-matrix, letter quality printers ideal for small business and corporate environments Both print at 264 characters per second (CPS) in the high-speed draft mode and 88 CPS in letter quality mode, at a quiet 55 dB or less noise level. The narrow carriage, 80-column LQ-850 and wide carriage, 136-column LQ-1050 bidirectionally print high-resolution quality in both text and graphics. For versatility and ease of operation, the LQ-850 and LQ-1050 are built with SmartPark™, the paper handling feature which allows changing paper without changing hardware, and SelectType, an illuminated LED, front control panel for selection of resident and optional fonts, pitches and print modes at the touch of a button. There's also a standard 6K internal buffer And both come with Epson's one year limited warranty

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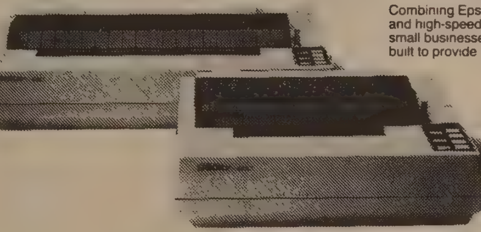

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HARDWARE
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- Industry standard PHOENIX Bios
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- SHADOW RAM for system & EGA Bios
- Norton SI:23, Landmark speed:26
- 80287 or 80387 co-processor socket
- 1.2 MB floppy drive standard
- Hard & Floppy disk controller standard
- 230W power supply standard
- Keytronics 101 enhanced keyboard standard
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- Real time clock standard
- Hercules compatible monochrome card standard
- 12″ Amber TTL monitor standard
- 15 days money back guarantee for S/W compatibility

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Options:

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EXP 8088 System

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- Printer Port
- Hard/Floppy Disk Controller
- Real Time Clock
- Hercules Compatible Mono Card
- 12″ tilt & swivel monitor
- Keyboard
- Hardware Reset Switch
- Turbo Mode Switch & LED
- 230W Power Supply
- No Hidden Cost - Ready To Run!
- Optional Tower Case

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12 MHz 0 WAIT System
ONLY $945

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- Real time clock
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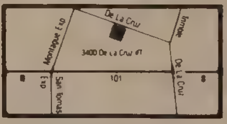

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ST251/ST251-1 hard disk	355/435
ST4096 hard disk	675
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Micropolis 70MB	535

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80286 cpu bd (6/10MHz)	245
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* Call for all types of accessories

HARDWARE
BUYERS' GUIDE

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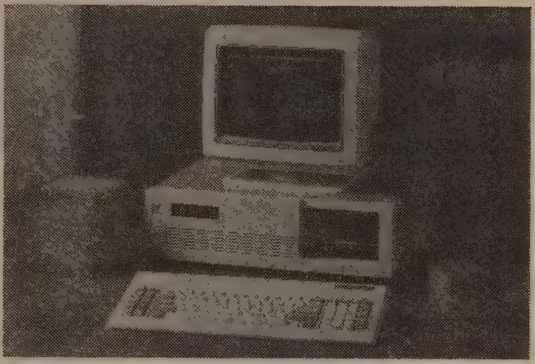

FEATURES

- 80286-10 Intel CPU chip.
- 512KB Memory Installed, expandable to 1MB on the CPU Board.
- 8/10 MHZ clock speed. (1 WAIT State)
- AWARD Modular Bios.
- Built in Bios Setup S/W.
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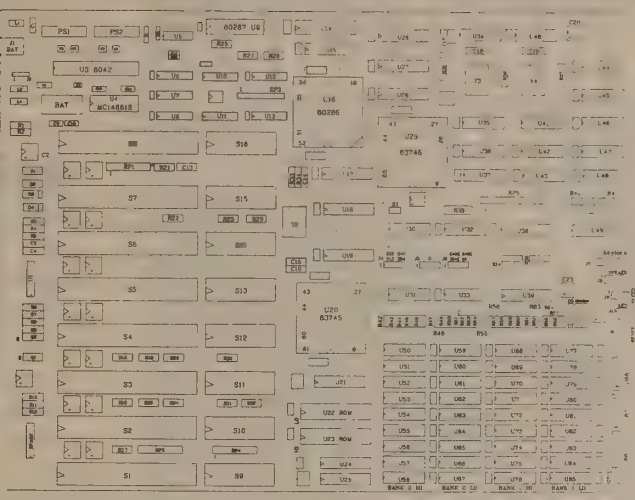

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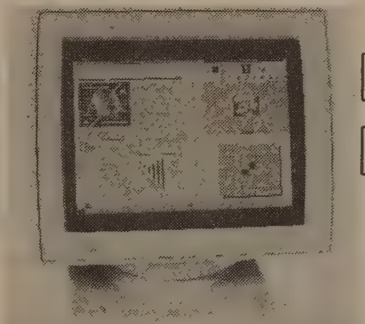

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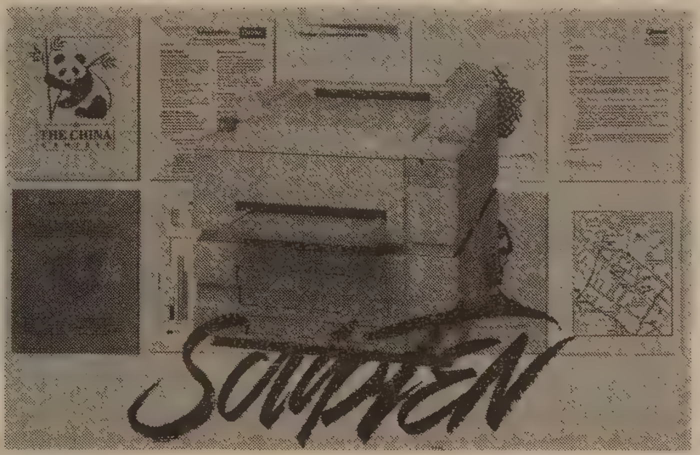

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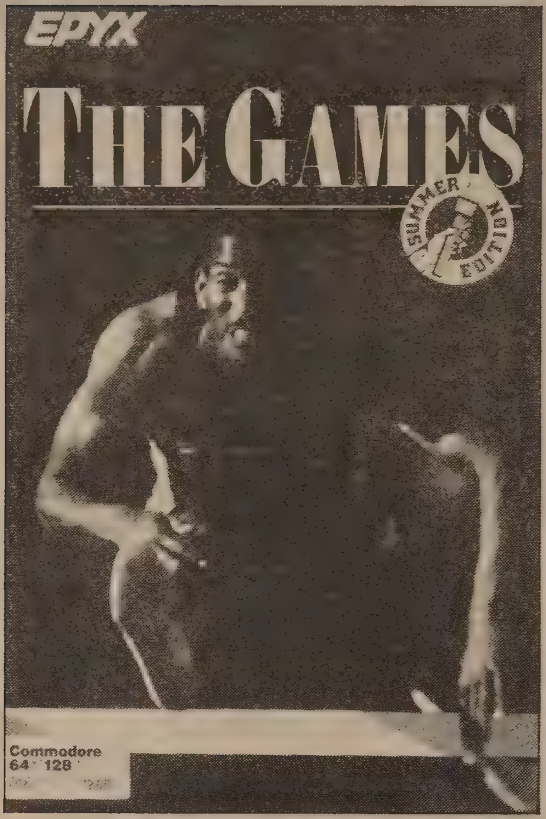

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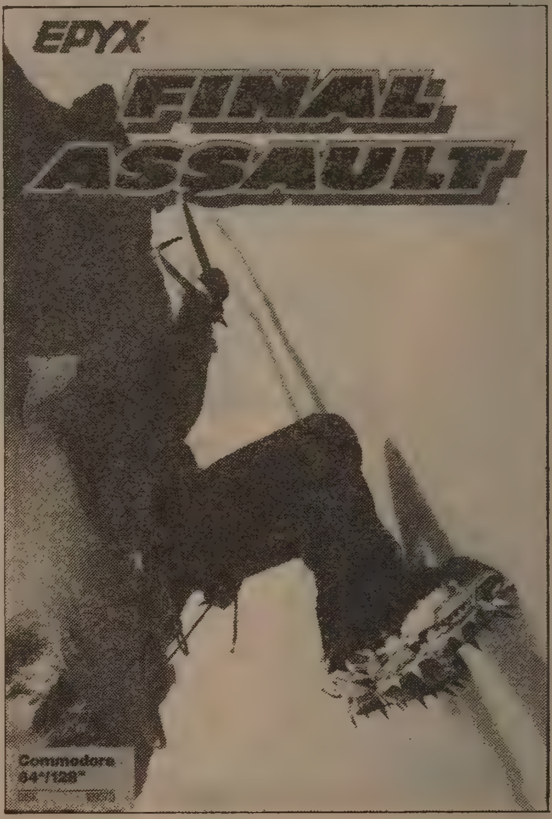

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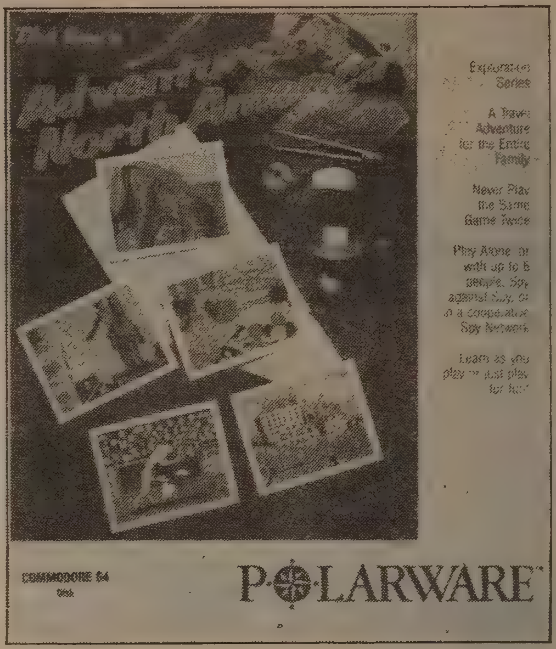
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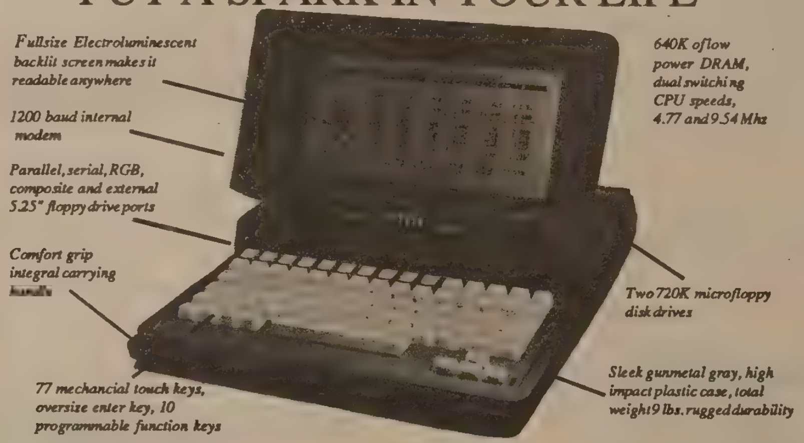
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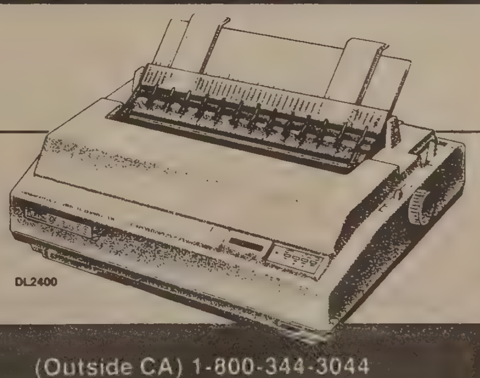

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Illustrator 88:

The Features War Continues

By Roger Karraker and Robert Madrid

A popular year-end sport for writers is to attempt to find deep meaning and significance, some historical turning point, in a 12-month span that is otherwise best remembered for the relentless onslaught of the Four Horsemen of the Apocalypse: plague, famine, pestilence and war.

The computer equivalent of the Four Horsemen must be Obsolescence, Price Increases, Viruses and Hype. The year 1988 had plenty of each. But amidst the pain, suffering and angst, one group of computer users—graphic designers—smiled their way through the year, for they had been blessed with Good Software.

One caveat here: we are speaking of professional design work, which means we are talking Macintosh. Want some proof? When *Publish!* magazine gave awards for desktop publishing design this summer, six of the seven went to work produced on the Macintosh. When the Society of Newspaper Design polled its members, Macs were preferred 6-1.

It is somewhat shocking, at year-end 1988, to look back and see the tools graphic designers were using just one year ago. For the most part, they were restricted to the Mac's tiny black-and-white screen and 68000 processor, a 1984 screamer that was, in 1987, downright sedate. Full-page graphics meant tedious scrolling or the addition of an external

Illustrator 88 offers a host of useful tools, from auto-trace to sophisticated color handling, but also has some surprising shortcomings.

monitor that cost as much as the computer itself.

Software? Black-and-white to match the monitor: granddaddy *MacDraw*, *FullPaint*, *SuperPaint* and the year's top entry, Adobe *Illustrator*, which promised to harness the powerful PostScript page description language. Introduced in March, 1987, *Illustrator* had by year-end become the state-of-the art design program.

When Apple CEO John Sculley introduced the Mac SE and Mac II in March 1987, he told the audience that the top-end Macintosh, the Plus, had suddenly become the bottom-end machine. Nine months later, the same was true on the software side. *MacDraw*, *Super Paint*, *Illustrator*, all were clearly inadequate. Publishers rushed to announce new-generation software that would meet the rising expectations of designers whose appetites were whetted by the new, faster, more powerful hardware.

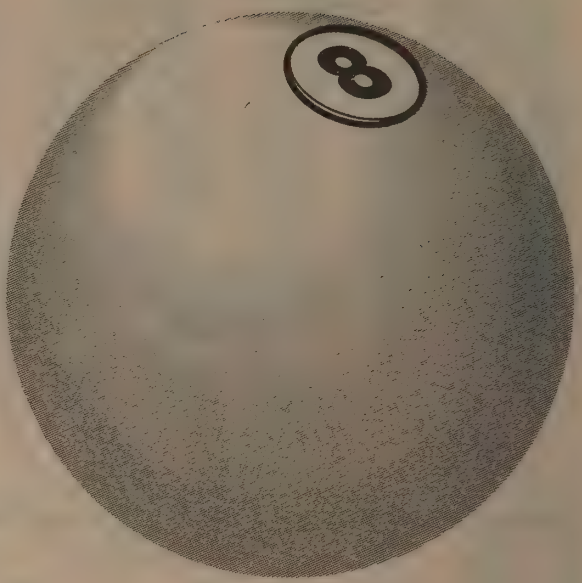
In the intervening 18 months graphics professionals have been staggered by new software, most of it designed for the Mac II, that for the first time brings truly professional tools to the design workstation. Well-heeled designers now can choose from video capture boards, color scanners, mini-Scitex color retouching software and other exotica. More importantly, the 1988 versions of day-to-day workhorse design programs—*MacDraw*, *Illustrator* and the Aldus newcomer *FreeHand*—are light-years ahead of their 1987 equivalents. What was truly impossible in 1987 is today commonplace.

While Aldus Corp.'s new program *FreeHand* garnered much of the publicity in 1988 (see sidebar), the big unanswered question by fall was whether Adobe could regain the top spot in designers' hearts with its new release, *Illustrator 88*. Santa Rosa designer R.B. Madrid, who has worked extensively with both *FreeHand* and *Illustrator*, got his hands on *Illustrator 88* and files this report.

Hands On: Artist's Impressions

Until *FreeHand* came along, *Illustrator* was It, in capital letters. Sure, it was a bit clunky, with all that point-and-click tracing of templates, but it was solid and got the job done. Then *FreeHand*, with its vastly superior tools and intuitive ease of use, set new standards. Can *Illustrator 88* keep up?

- Auto-trace is great. You import a bit-mapped object and merely click on one of the objects. *Illustrator* will trace the object automatically and create the Bezier curves. *Digital Darkroom* has auto-trace, too. *SuperPaint* 2.0 is supposed to have it when it comes out. Aldus says *FreeHand* 2.0 will have it. Already designers consider it a requirement. Soon auto-trace will be in every graphics program (if they're smart). Right now the auto trace tools are crude, but they will get better!
- You can't move an ungrouped line or object. First you have to group, click off, then move—very tedious.
- You can't size an object after it is drawn. Where *FreeHand* gives you a box around a grouped object so you can size it, *Illustrator* just groups the points where they are—sort of a freeze or lock—and is quite slow to move this grouped object from place to place. The solution *Illustrator* has provided is the so-called sizing tool that Carl Sagan must have invented: it's almost impossible to scale proportionally and do it quickly.
- I was a bit surprised at the relative ease at making a color library. The lack of a slider to control the color being selected is disheartening. Because you have to touch the keyboard so much, it seems to me that *Illustrator* should have gone one way or the other; mostly mouse or mostly keyboard. Being an artist, I vote for the mouse. I would like to see a tear-off menu for color selection; someday it will be a must. Both *FreeHand* and *Illustrator* have moveable color libraries that can be accessed by other files.
- Speaking of color libraries, *Illustrator 88* has Pantone colors built in. Designers who use spot colors often specify Pantone colors; they are a standard for designers and printers. *Illustrator* has licensed the Pantone set; you need only click on a color and *whoosh*, there it is. Aldus says *FreeHand* 2.0 will have Pantone colors, and *Laser Paint II* has them as well. This is a perfect example of an exclusive feature suddenly becoming standard and expected.
- *Illustrator 88* comes with two good utilities. Separator analyzes the artwork and generates the four color separations that the printer needs to make printing plates. DrawOver allows you to import *MacDraw* documents (PICT format) and automatically convert them to *Illustrator 88* (encapsulated PostScript) format. Combined with auto-trace, it gives *Illustrator 88* powerful capabilities to keep your object-oriented art up-to-date.
- *FreeHand* has a few more tools that are helpful—like the line tools—where *Illustrator* chose to omit them. Instead there is a measurement tool that to me is of virtually no use. This is supposed to be a graphic designer's application! On the other hand *Illustrator* has option keys that make up for some of the shortcomings. Holding down the Option key and clicking the scale tool gives you a dialogue box where you can uniformly size or size at different percentages.
- One of the biggest shortcomings is the lack of convenience with the quick keys. Like most designers I'm right-handed. I work fastest if I can keep my right hand on the mouse and do all the keyboard commands with my left land. *FreeHand* does this: Command-E enlarges and Command-R reduces—and they are mnemonic. But with *Illustrator* I must use Command-H and Command-M, requiring that I either use two hands or make a long, awkward stretch with my left hand—and my hands aren't small.



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- Just about all the *Illustrator* tools feel clumsy: you can't just sit down right away and start using them. The freehand tool creates a wimpy scriggle of a line and is hard to follow unless your nose is pressed up to the screen. Also the line segments that this tool creates when the calculations are done are sort of simple. I mean that most of the time *Illustrator* doesn't give you enough points to work with. (neither does *FreeHand*) and you have to add more points manually. I would like to see a dialogue box with a "hot" or quick key, so that the user can choose how many points he wants on a line or object. This could be particularly helpful for circles and ovals that you want to pare down: instead of the routine four points it gives you, make it 16 points, or eight or ten.
- Type is no better than it was in *Illustrator* 1.1! Type handling has always been awkward in *Illustrator*. You can change the stroke and fill easily, even fill the type with a custom pattern, but *FreeHand* allows more interaction on kerning and spacing.

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- Probably the best feature I found in *Illustrator 88* is the blend tool, the first one of its kind for the Mac that I have seen—and it's terrific, especially for making a smooth transition from color to color. Sure, this will change a pencil into an alligator in as many steps as you want, but the benefit of this tool is more for the shading and tinting effect you can master with a little work. *FreeHand* is way behind in this area; the ability to make irregular fills is a true gift to the artist.
- The drawback is that *Illustrator* only gives you a portion of what you need. Okay, great, we have the blend tool: now where are the graduated, radial and PostScript fills other programs have? You might say that *Illustrator*'s blend tool will do all those things. But you need three days to do what *FreeHand*'s graduated fills and the like do in a blink of the eye.
- Another drawback is in the field of clipping and pasting inside another object. This may not seem like a lot but it is a very nice convenience to have a program that can do this quickly (*FreeHand* does). *Illustrator* has masking, but it's pretty lame.
- *Illustrator* also missed the boat on the layering that *FreeHand* lets you do. *Illustrator* lets you stack or paste on top, but the capability is pretty elementary next to *FreeHand*, which allows 200 layers. *Illustrator* has a "hide" command that locks an object or line in a particular place, then takes it from the screen so you can work in that general area without selecting the points of another object. However, you can't see the hidden object, so alignment is impossible in this mode.
- You can't work in the preview mode! You can work, or see it in color, but you can't do both. In *FreeHand* you can, and it is an enormous time-saver. Even on a 5-megabyte Mac II, *Illustrator* takes forever to draw the screen; in color it's really impossible.
- There is no menu command to align to a grid or to align objects. This is a real nail in the coffin.
- *Illustrator* is a producer. You can count on *Illustrator* printing or accepting an array of differently formatted files with ease, where *FreeHand* falls very short, especially around printing. *Illustrator* is steady; if another program fails to do what you need, *Illustrator* is there.

I seem pretty harsh on *Illustrator 88*, but I just expected a lot more from Adobe after *FreeHand* came out. *Illustrator 88* is an excellent program to have; if you have the money buy both it and *FreeHand*. But unless you are wealthy, this is how I would make a decision: If you have *Illustrator* 1.1, stay with *Illustrator 88*; the upgrade is cheap, and since you already know the keystrokes and are accustomed to the way *Illustrator* handles, it's a very nice package. But if you're willing to take a little time to learn a new program, or you don't have *Illustrator* already, go for *FreeHand* in a heartbeat. *FreeHand* is just easier to learn because of its interface. And there's the promise of the new features in *FreeHand* 2.0. Which means that *Illustrator 89* can't be far away. ☐

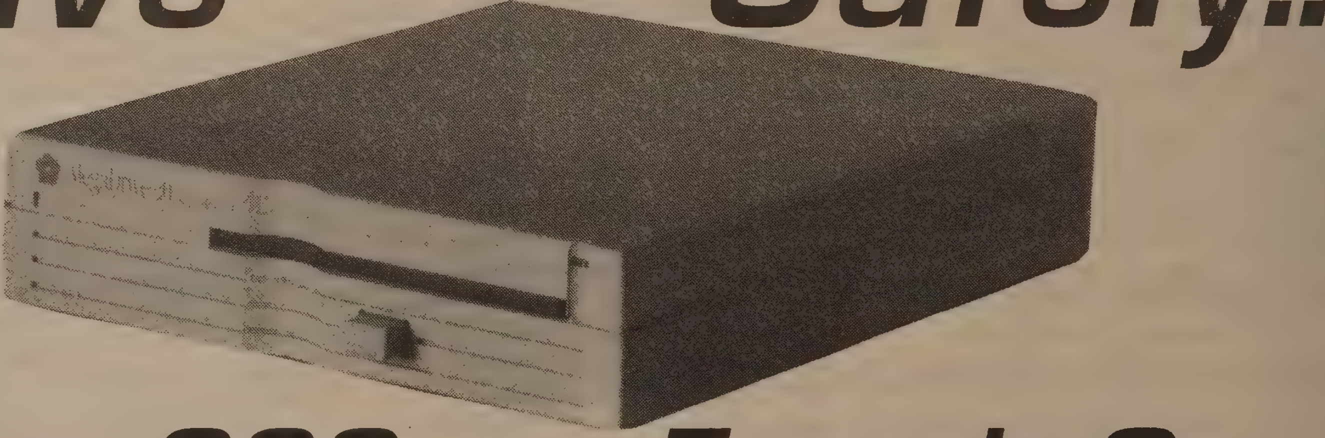
Battle Bulletins from the Designer Software Front

Apple Expo, March 1987: Apple announces color Mac II. Deliveries are slow until fourth quarter.

Macworld Expo, January 1988: Aldus Corp., publisher of industry leader *PageMaker*, strikes first, showing *FreeHand*, a new object-oriented drawing program that features 200 drawing layers and color libraries and will automatically print spot color separations. The program is fast, allows users to modify the art while viewing it in full color and offers a first: a freehand drawing tool. The artist merely draws freehand on screen; the program automatically turns the line into a series of Bezier curves that can be edited individually. Best of all, the program ships in March (see *MicroTimes*, August 1988). *FreeHand* is suddenly the state-of-the-art program, but as designers push it to its limits they encounter inexplicable failures to print, failures that Aldus cannot explain or cure.

July 1988: A market research firm convenes a "focus group" of designers and illustrators to discuss new software. The group ranks *FreeHand* with 8.5-9 out of a possible 10. *Illustrator* 1.1 is rated at 7.0-7.5. Only three of the group have used the just-released *Illustrator 88*. The group sees a new software package for designers, one that adds exciting new features—but leaves out some important ones.

October 1988: Just as this review of *Illustrator 88* was going to press, Aldus Corp. announces *FreeHand* 2.0, a new version with, as expected, many new features. Watch for a review in *MicroTimes* soon.



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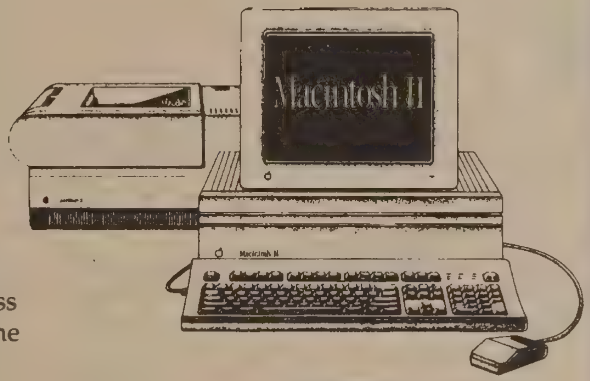

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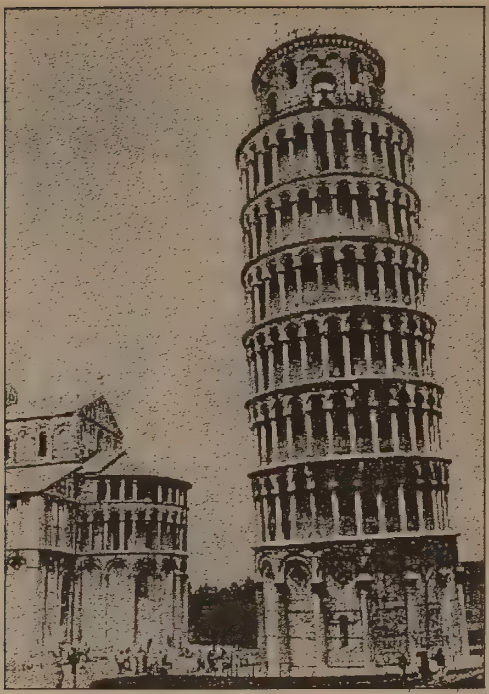

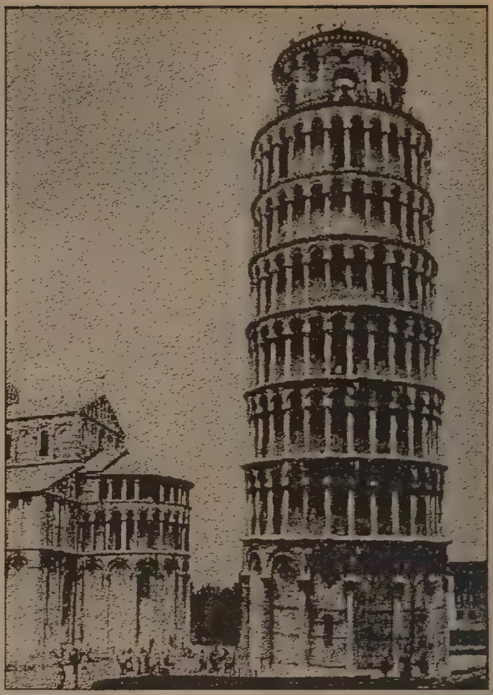

Digital Darkroom

Image Manipulation Tools From The Wizards At Silicon Beach

By Mike Markowitz

Black and white! How can you possibly have great art with only black and white? Ask Ansel Adams, or Henri Cartier-Bresson or Margaret Bourke-White.

Digital Darkroom brings the techniques and tricks of the greatest photographers to the screen of your Macintosh, even if you don't know your ASA from your elbow.

Now that high-resolution optical scanners for the Macintosh are almost becoming affordable, there is an urgent need for software that can bring out the best in scanned images that are often fuzzy, speckled or marginally usable. The graphics wizards at Silicon Beach have gone far beyond these simple capabilities, however, to provide such an arsenal of advanced image processing tools that you may never believe a photograph again.

Consider one of the examples in the program's Tutorial. You load a digitized photo of the Leaning Tower of Pisa. You choose the Selection Polygon from a palette of tools and click out the outline of the Tower. Then choose Free Rotate from the Transform menu—square "handles" appear at the corners of the selected area. Drag one of the handles clockwise a little bit. Miracolo! The Perpendicular Tower of Pisa! To fill the white space left in the sky, you simply "pick up" the gray tone of the sky with a Brush tool, and paint over the gap with it.

Requirements

You don't actually need a scanner—*Digital Darkroom* can work its magic on just about any kind of image format you can stuff into your Mac, but it has a prodigious demand for memory. The program actually juggles several versions of the same image. The original image resides in RAM. What you see on the screen is filtered through any changes you may have applied to a Main Map and a Brightness and Contrast map. If you like what you see, you can permanently assign these changes to the original image.

Although the Mac II is capable of displaying 256 different gray tones on an appropriate monitor, *Digital Darkroom* keeps the full eight bits in memory, but only displays 128 - or seven bits (reserving the rest for system use, to draw the tool icons, menus, scroll bars, etc.).

For this review we used an Abaton 300/FB scanner and a Mac II with the Apple color video card and monitor, 5Mb of RAM and a minimal 40Mb hard disk. Some full-page halftone scans easily exceeded 3Mb. The image formats supported by the Abaton software were only partially compatible with the formats *Digital Darkroom* can open. You thought there was only one kind of TIFF (Tagged Image File Format)? Well, think again. It can be confusing. *Digital Darkroom* can open 1, 2, 4, 6 and 8-bit TIFF files.

The program's "native" format is PICT2. It can also handle plain old PICT, *MacPaint* and ThunderScan bitmaps. There is a compressed "Archive" format that takes up less space on disk, but takes longer to save or open. You can also save images in EPS (Encapsulated PostScript) or Adobe *Illustrator* format for export to desktop publishing programs.

Packaging

Digital Darkroom is packaged in a glossy slipcased three-ring binder, with a clever plastic insert that holds two 800K disks (the program and samples). There is also a pocket for the Quick Reference Card.

The manual has tab dividers for the major sections and a detailed index. The documentation does not assume any previous knowledge of the highly technical worlds of photography and graphics printing. The manual has good illustrations and thoughtful explanations for the many new concepts that are introduced.

Expandability

Digital Darkroom was written to accommodate "plug-in" modules from other vendors or program-

Load a digitized photo of the Leaning Tower of Pisa. Choose the Selection Polygon from a palette of tools and click out the outline of the Tower. Then choose Free Rotate from the Transform menu—square "handles" appear at the corners of the selected area. Drag one of the handles clockwise a little bit. Miracolo! The Perpendicular Tower of Pisa!

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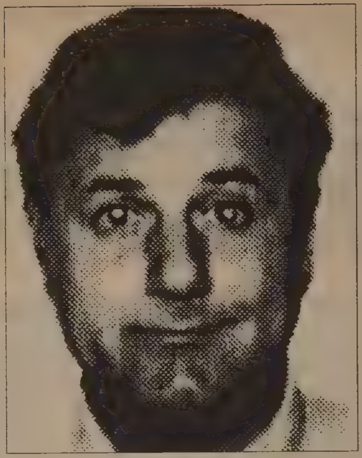
mers. These might be specialized filters, scanner drivers, special printer drivers or things yet undreamed of. They go in a special folder called the "Pouch," where the program will automatically recognize them and include them in its menus. Silicon Beach provides detailed technical guidelines to developers interested in creating "plug-ins." This kind of open architecture is refreshing to see in an industry that has grown increasingly paranoid about "trade secrets."

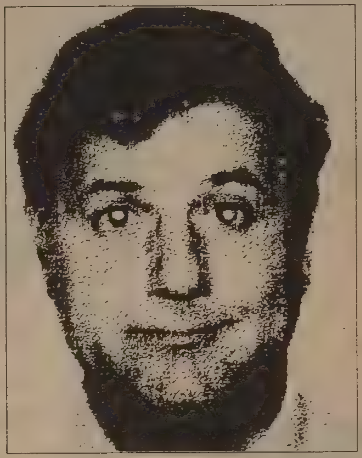
Summary

Digital Darkroom gives you the same kind of power over images that a good word processor gives you over text. Just as a word processor doesn't automatically make you a great writer, an image processor cannot make you an artist. People who think graphically (a major category of Mac users) will be able dive into this program with delight. People who work from the other cerebral hemisphere will have to make their way into this new world more cautiously, gradually experimenting with the simple tools and gaining confidence through trial and error. There's an "UNDO" function on the edit menu, and the program warns you when you try to do anything that requires so much memory that it cannot be undone.

Some scanner users may be content with the software that came bundled with the machine. Not after they take a look at *Digital Darkroom*. (*Digital Darkroom*, published by Silicon Beach Software, 9770 Carroll Center Road, Suite J, San Diego, CA 92126. Phone: (619) 695-6956. List price: $295. Hardware requirements: Mac Plus, SE or II, with as much memory as you can get. Laser printer and scanner are optional but desirable.) ☐



Portrait of the author as a standard halftone. (Image scanned from an I.D. badge.)



Portrait of the author as a Advanced Halftone. (Same image, different print output option.)

> **Silicon Beach provides detailed technical guidelines to developers interested in creating "plug-ins." This kind of open architecture is refreshing to see in an industry that has grown increasingly paranoid about "trade secrets."**

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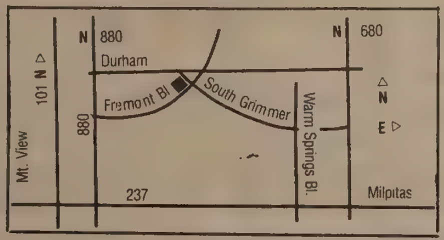

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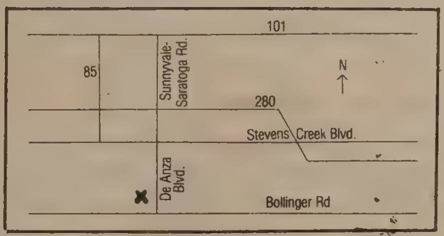

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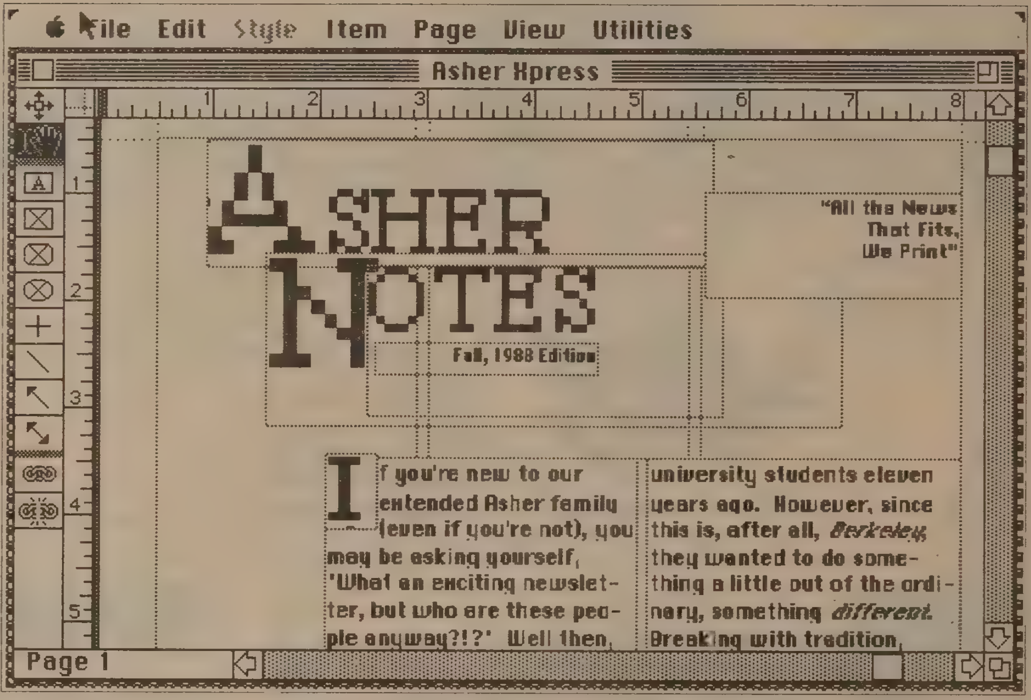
Quark XPress 2.0:

Professional Power For The Experienced Publisher

By Helmut Kobler

Quark's *XPress* page layout program has earned the praise of publishing professionals for the sophistication of its features and its powerful options. At the same time, if ease of use is your main criterion, it has a few drawbacks.

I've always avoided *XPress* because of its awkward approach to designing pages. One of the benefits of designing publications electronically is that you can arrange and rearrange text and graphics quickly—you're not slowed down by wax or X-acto knives, so your time is spent on design, not the literal "cut and paste" work. But after working with *PageMaker*, the most flexible program for design I know, *XPress* made me feel that I might just as well be gluing elements to the page.



ASHER NOTES

"All the News That Fits, We Print"

Fall, 1988 Edition

If you're new to our extended Asher family (even if you're not), you may be asking yourself, 'What an exciting newsletter, but who are these people anyway?!?' Well then, university students eleven years ago. However, since this is, after all, *Berkeley*, they wanted to do something a little out of the ordinary, something *different*. Breaking with tradition,

One of the key elements of XPress's design is that every element on the page must have its own box.

You have to draw frames, for instance, to hold your page's text and graphics—an unnecessary step. Changing a layout can be cumbersome too; frames created inside larger frames—a caption in a picture frame, for instance—can't be dragged outside of their "parent" frames. If you want to separate a caption from its picture, *XPress* requires a few cut and paste functions instead of a quick drag of the mouse.

These little setbacks are frustrating if you're designing from scratch and expect to experiment with layouts. You're better off if you know how your publication will look before creating it in *XPress*. The program also seems tuned for publications like books, reports and newspapers whose pages follow a standard layout format throughout. You can set up a column and margin blueprint in *XPress*'s Default Pages, then import Microsoft *Word*, *MacWrite*, *WriteNow*, or ASCII documents, and XPress flows the text through successive columns and pages. The text flow is quick, too—PageMaker sort of chugs along as it places text on every page, but *XPress* usually finishes in seconds. Jumping from page to page is a lot quicker too.

XPress can be frustrating if you're designing from scratch and expect to experiment with layouts. You're better off if you know how your publication will look before creating it in XPress.

Precision Type

Likewise, *XPress* gives you more control over PostScript type than *PageMaker*, although Letrasets' *ReadySetGo!* 4.5 handles type much like *XPress*. *XPress* anticipates the demands of a professional typographer; you can set character kerning and tracking in increments of 1/200 of an em space, versus *PageMaker*'s 1/24 of the character's point size. Leading is defined in 1/1000 of a point, versus *PageMaker*'s .5 point value. You can set type in any size from 2 to 500 points—in quarter point increments, too—while *PageMaker*'s type ceiling goes by single point steps up to 127 points. And believe it or not, 127 points is not always all you'll ever need. Finally, *XPress* lets you make PostScript type thinner or fatter by scaling it with a width percentage. You might use Adobe's Garamond, condensed by 40%, for body copy, for instance.

But is *XPress* splitting hairs with this fine degree of typographical control? People without much typographical experience will probably think so, and I don't imagine that someone who publishes a small newsletter or internal company documents will care whether they can kern by 1/4 of a point or 1/1000s of an em.

There's no question, though, that *XPress*'s type controls have their place. Designers and printers—especially those with conventional production experience—demand fine typography for their commercial work. Professionals aren't sympathetic if they can't get the same quality they expect from conventional presses, and many designers I've spoken with have cited *XPress*'s type precision as the feature that sold them on the program. In any case, you certainly don't stand to lose anything if your page layout program offers this flexibility.

Text Handling

Quark advertises *XPress* as having a built-in word processor—I don't doubt that you could type short stories directly onto your page, but you'll probably be more comfortable writing in a word processor like *WriteNow* or Microsoft *Word*, and importing your copy later. But once you've got the text in, *XPress* manages it well. Version 2.0, for instance, now has style sheets, so you can quickly format recurring text styles like the headlines, captions and body text in your publication. You can include any of *XPress*'s type specifications, from tracking to horizontal scaling, in a style sheet—what I really appreciate about the feature, though, is that you can call your style sheets with keyboard commands instead of reaching for the mouse. It's a minor virtue, but it saves time.

XPress also has the most most powerful Find and Change function I've seen in a page layout program. *PageMaker* can't pull a simple word from a story, but *XPress* not only lets you change simple text strings (find the word "Microtimes" and replace it with "MicroTimes") but it looks for text attributes, too. I can ask *XPress* to find the word "Mi-

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Byte Magazine, August 1988

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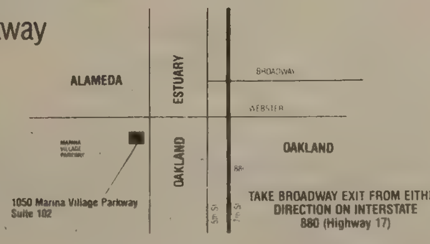
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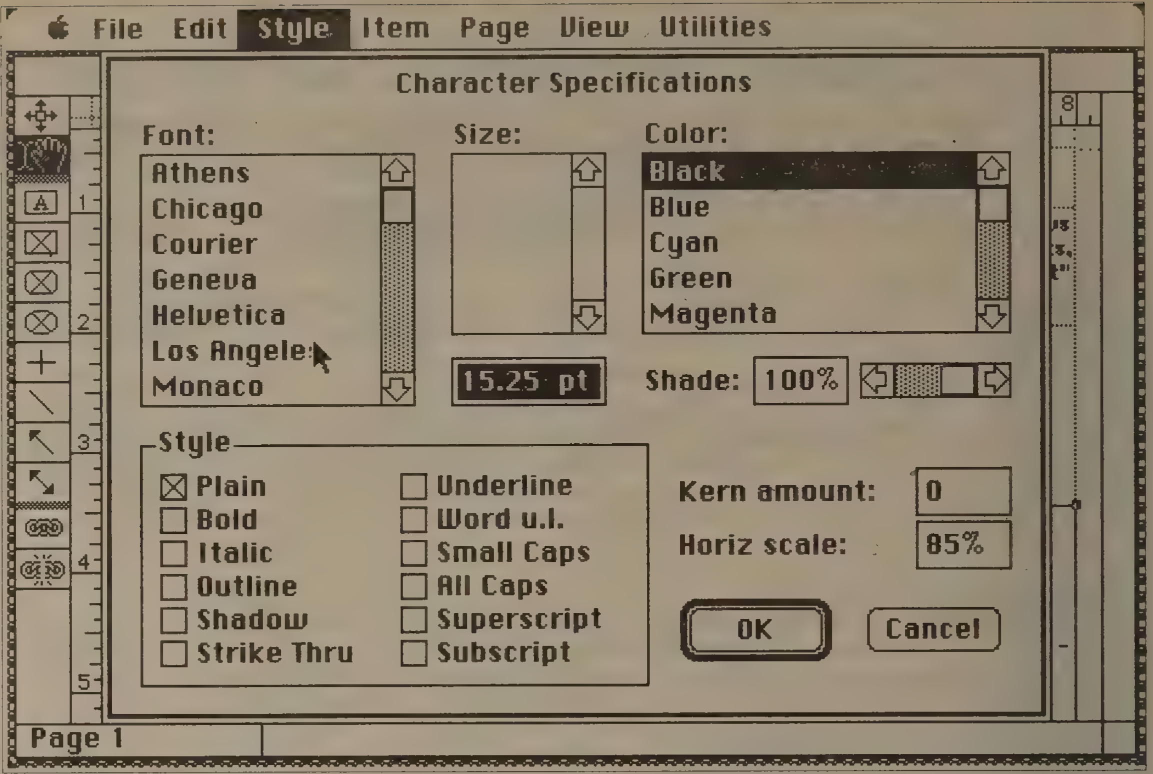
*Everex's First Authorized Computer Systems Reseller croTimes"—but only if it's been set in New Baskerville Bold at 14 points and in small capitals—and then change only that occurrence to Stone Informal Italic, 12 points, in capitals.

That's an extreme example, but *XPress* would nonetheless handle it gracefully. The Find and Change feature makes updating text in your layouts easy, while something as simple as capitalizing the small tee of "MicroTimes" in a *PageMaker* document, as many publishers know, can be a nightmare.

XPress also hyphenates text according to an algorithm—not by a large hyphenation dictionary—but you can set up rules dictating how many characters may precede and follow a word break, and even how many consecutive lines can be hyphenated. Any words that *XPress* insists on breaking awkwardly can be added to an exceptions dictionary. There's also an online spelling checker to quickly proof spelling before you go to press.



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Kern amount: 0

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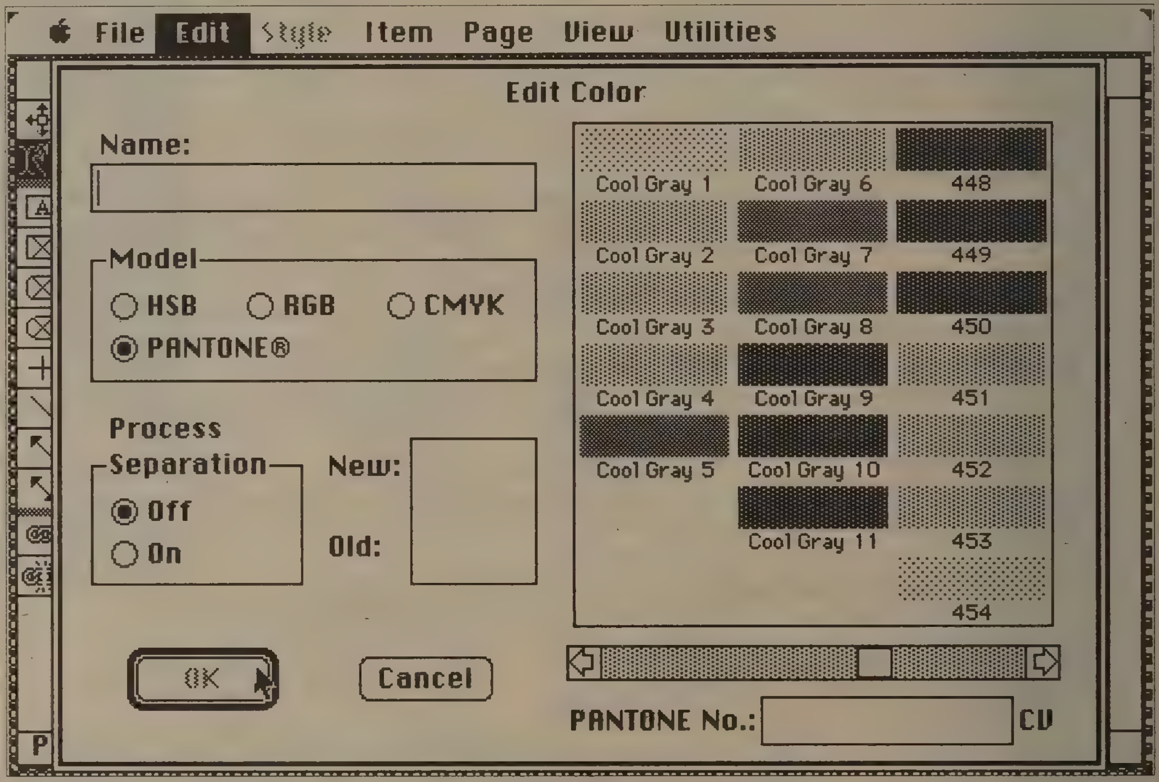
XPress gives unprecedented sophistication and flexibility in type handling.



Model: ○ HSB ○ RGB ○ CMYK ● PANTONE®

Process Separation: ● Off ○ On

XPress supports the use of industry-standard Pantone colors and creates its own color separations.

Glorious Color

XPress is most exciting if you're working with color in a publication. It's the only page layout program for the Mac that creates process color separations for the Cyan, Yellow, Magenta and Black plates of your press. *PageMaker* and *ReadySetGo!* do spot color separations, where they print each distinct color on its own page, but *XPress* lets you assign colors to text and graphics and figures out what percentage of the four process colors go on each separation. You can create colors in Red, Green, Blue, or Hue Lightness and Saturation, or Cyan, Yellow, Magenta and Black color models.

XPress is also the first to offer a database of Pantone colors, so you can spec colors with familiar Pantones, and the program later translates them into their closest CYMB equivalents. *XPress* also separates Encapsulated PostScript Files from Adobe *Illustrator 88*.

If you work with process colors, *XPress*'s four color separations alone make it worthwhile. You don't have to pay the printer to separate your colors now. Or, if you were already skipping the printer, you don't have to bother with the tedious *PageMaker* approach to putting process color on the page: creating color objects like rules, boxes and illustrations in *Illustrator 88*, importing them as Encapsulated PostScript graphics to *PageMaker*, then saving each page as an EPSF graphic, and finally bringing the files into Adobe's *Separator* utility for separations. Now simple objects can be created with *XPress*'s line, box and circle tools—or fancier graphics imported from Illustrator—and separated without further effort.

XPress's separations of Adobe's *Illustrator 88* files brings up an interesting point, however: there's no standard file format to define PostScript color. Color is not built into the PostScript code that Adobe licenses to printer makers, so it's left up to the individual software developers to decide how they want to print Cyan, Magenta and Yellow. Incompatibilities are inevitable, then, and that's why *XPress* separates PostScript files from Adobe *Illustrator*, but not the EPSF files from Aldus's *FreeHand*, Letraset's *LetraStudio* and perhaps other PostScript programs. Ideally, I should be able to bring in a color graphic from *Illustrator*, a *FreeHand* chart, a logo done with *LetraStudio*—and separate them all from the same layout program. But somebody must quickly set a standard for defining PostScript color, or this kind of flexibility will never evolve.

Besides making fancy color separations, *XPress* imports all the graphics file formats you'd expect: *MacPaint*, PICT, TIFF images—even the 24 bit color TIFF format produced by color scanners and digitizers. You can set the line screens of your grey scale TIFF pictures, and play with their screen angles and grey scale maps to create special effects. *XPress* also wraps text around any graphic's rectangular frame or the irregular contours of the picture itself.

Anyone doing four-color publishing should look carefully at *XPress*—if its process color separations don't save you money, they'll at least save time. The program's precise typography is also a big benefit, but for quick, freestyle design, though, you may feel a little weighed down. (Quark *XPress* 2.0, $695. Quark, Inc., 300 South Jackson St., Suite 100, Denver, CO 80209.) ☐

XPress anticipates the demands of a professional typographer; you can set character kerning and tracking in increments of 1/200 of an em space, versus PageMaker's 1/24 of the character's point size.

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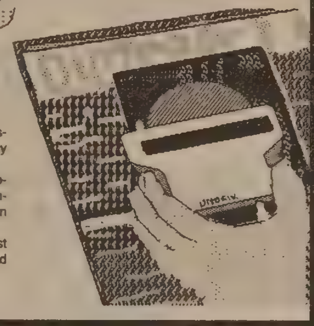

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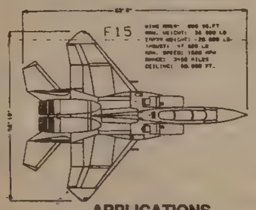

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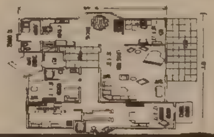

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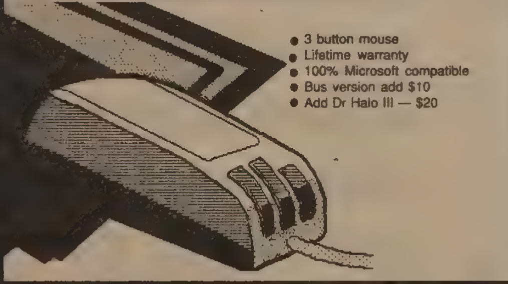

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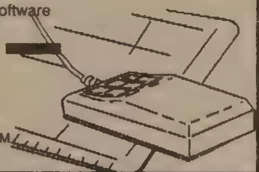

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MAC @ WORK

BMUG

BY DAVID MORGENSTERN

What's NeXT At BMUG, Holiday Gift Ideas, Weird Printer Behavior And Other Delights

Welcome to the BMUG column. We've got a lot of great BMUG gifts for the holiday season and a potpourri of tips, information and cheer.

What's NeXT?

Are you counting the days until baseball season? The weekly BMUG main meeting is an acceptable winter substitute. We have visiting software marketing teams hoping to get a hit. There are bleacher bums, ready to pounce on the slightest error or bad call. Unfortunately, there's not a drop of beer, or a byte to eat. But the crowd at the meeting will tell you that BMUG never strikes out!

Tip: If you only have a single megabyte of memory, you will sometimes get the running out of memory warning from your application. Before you quit the document and turn off the ten INITs you've installed, check the RAM-cache in the Control Panel (in the General CDEV) under the Apple menu. If that's turned off, you can usually free-up memory by clearing the clipboard. Copy a single letter twice, by selecting a letter and then pressing the Control and C keys together two times. This has to be done twice because everything (almost everything) is stored in the Undo buffer. That's how the Undo feature under the Edit menu works!

The NeXT Nexus

Say goodbye to another word in computerlingo. The word *next* will forevermore be associated with the new computer from Steve Jobs. "I'll take the *NeXT* one," There will always be a hint of ambiguity among computer pals—the next bus? NeXT Week?

The new NeXT computer is a black cube and a monitor. It's the hot topic for gadget hounds with cash burning holes in their pockets. It has lots of everything—speed, memory—and lots of new goodies. Except availability.

The NeXT box will be ready for sale in six months (or more—remember that everything in the computer world is counted in quarters—Version 1.0 of the NeXT operating system isn't due until the second quarter of 1989) and then only to university students, faculty and influential research corporations. Jobs says that he hopes that the computer will be affordable for every incoming freshman. No dorm room would be complete without a UNIX workstation.

Copyright © 1988 by David Morgenstern. David Morgenstern is a Bay Area "MacNarturer" and BMUG member. David is DMORGENSTERN on GEnie and himself at (415) 641-7352.

Oedipus NeXT

The comments at the meeting from people who'd seen the machine were positive. NeXT blessed BMUG with a handful of passes, so we had credible testimony. Someone said that the NeXT box "makes the Mac II look like a toy."

Everyone felt that, for a UNIX computer, the NeXT user interface is usable, but not particularly intuitive. Beginners couldn't get going on it like they can on a Macintosh. Others worried that the spirit of easy user interfaces on the Mac will go down the tube because of the current emphasis on power.

Bill Gates has said that Microsoft will absolutely not develop programs for the NeXT machine. He's acting like the kid with all the marbles. Tired of his bossy rules, his buddies went off to start their own games.

Perhaps Gates is mad because the NeXT logo looks a lot like the new logo designed for *Works* 2.0. Maybe it's because programmers like the object-oriented development environment, *NextStep*, provided with the computer. IBM likes it too, since they're licensing it for their own computers. I might be worried too, if an IBM RT running *NextStep* looks a lot better than an PS/2 running *Presentation Manager* software. He's so blue, thinking of yooouuu—NeXT!

Given Microsoft's Macintosh record of problem releases, system incompatibilities and buggy software, we agreed that this developmental boycott is really an unfair advantage for NeXT. Apple should sue Microsoft to force them to write NeXT software.

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Steve Jobs kept ducking questions about the NeXT's lack of a floppy drive. It comes with a read/write *floptical* drive that combines magnetic and optical technologies. The disks for the drive hold 256 megabytes, but cost $50 each (but remember that a box of 3.5" Sony floppies cost $48 in 1984). The NeXT floptical drive is made by Canon. It will not be compatible with the cheaper and greater capacity Sony (the people that make the current Mac

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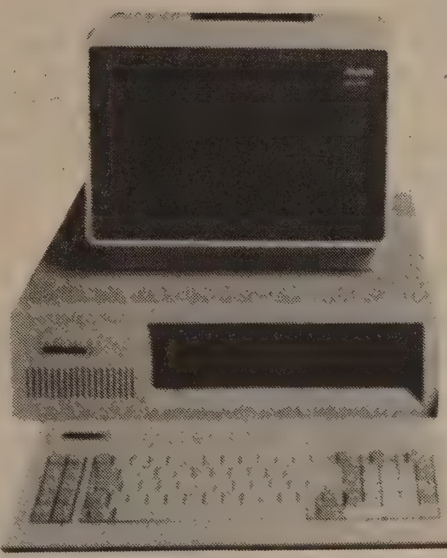

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☐ #310 QMODEM: Fast and easy to use. Has a windowing feature. $6

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☐ #455, #681, #682 PC TYPE+: This processor is from Jim Button's library. Easy to use and combines easily with PC FILE+ for mail merge $18

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☐ #199 PC CALC This program is easier to use than Lotus, very powerful and effective $6

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☐ #133 ULTRA UTILITIES Lost files may be recovered using this program. Features include file review and modification $6

☐ #405 DESKTEAM: Memory resident utility program that has a phone dialer, printer controller, notepad, calculator, calendar, and an alarm clock $6

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☐ #517 IMAGEPRINT: This program allows your dot matrix printer to generate documents that are in Near Letter Quality format $6

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☐ #558 PC PROMPT: Memory resident program that has HELP commands on an online mode. Provides syntax of most DOS commands. $6

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☐ #579, #580 PASCAL TUTOR: Learn to program in PASCAL in the conveniency of your own home $12

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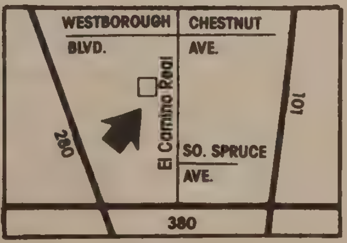

floppy drives for Apple) f-drive coming out soon. Jobs said, "Floppy disk drives are a technology of the '70s." He is trying to convince developers to pool their software on the floptical disks, or use network distribution with a modem. The developers were not convinced.

There aren't many NeXT computers in existence now. A BMUGer drove down to the new main office in Fremont and peeked in the back door. There was a vast open space and a set of rollers. The NeXT logo is in place on the side of the building and the t-shirts are out. First things first.

Sticking Your NeXT Out

The NeXT debutante ball was held in San Francisco's Louise M. Davies Symphony Hall. Security for the event was remarkably tight, but not unbeatable to BMUG gate crashers!

The invitation card is usually the magic pass into a computer-press mutual love ceremony. If you can't make it into the party, you give someone else the card. Many favors were bartered for spots in the NeXT audience.

The NeXT unveiling added a new twist to the usual procedure. If you received a card you had to RSVP. Sending someone else in your place was fine, but NeXT wanted to know their name in advance. This meant that entrance to the hall was not tied to possession of a holy invitation—only if you were on the list were you allowed into the party. Shades of Studio 54!

The brawny bouncers at the door were not impressed by frantic whining reporters. "But I'm from *Time!*" had zero effect on the doormen, used to protecting rock stars from their rabid fans. People on the list got in without their invitation cards, since **everyone** had to produce photo-identification. I wonder if any wise guy scalped his invitation to some poor dope in the waiting crowd and then walked right in. "Hey, how would I know they'd check IDs?"

One resourceful long-time BMUG member, who claims to have received an invitation but "forgot" to RSVP, was able to fool the door-wise security personnel. He dressed up in a white waiter's outfit, complete with a black bow-tie and towel—then carried a full platter of cold cuts into the hall, claiming to be with the caterers! He ditched the cold cuts somewhere and no one in the meeting gave him a second glance. This story is for real and not baloney!

The Season to BMUGing

It's that time of the year again—the season of worried desperate last-minute gift buying and wrapping. Here are some gift possibilities that will be sure hits for a Macintosh person.

- **BMUG Membership.** This is one gift with many parts. It is the only way to receive our semiannual newsletter. The *BMUGNewsletter* contains articles from members around the country and from authors who write for all the Mac journals. Topics can range from programming tear-off menus to the experience of single-parenting with a Mac. Membership also includes access to our multi-line bulletin board. The BMUG BBS is linked with local Bay Area networks, as well as USENET and EchoMac, both international networks. Membership is only $25 for six months, or $40 a year. It also has an added bonus of arriving in mid-January, when you've grown tired of all the stuff you got last month and want a new toy!
- **BMUG on HyperCard** is a 200+ page book that contains a screen-dump of almost every stack in our software library (the largest collection in the country available to the public), with a short description—and many times a review or warning. It also has a number of articles on *HyperCard* and an index. Although not as much fun as opening and browsing through hundreds of stacks, it is an acceptable paper simulation. Only $10.
- **The BMUG PD-ROM™** is for the lucky Macintosh pioneers that have picked up the new optical CD-ROM drive. One 4.75" plastic disk holds our entire 280 floppy library, all the articles in our *Newsletters*, and many volumes of messages from Mac-related information services. It's very hot and one of the best selling Macintosh CD products. Only $100.

Five Golden Disks

The BMUG Software Library keeps growing. New disks are unveiled every week at our main meeting. Here are five disks that no Mac household should be without.

Utilities 8. This is the BMUG anti-viral disk. It includes virus attacking programs of all kinds: Applications (*Interferon, Ferret, Virus Rx*), DA (*Virus Detective™*) and an Init (*Vaccine*). The disk also has a couple of articles on viruses and how they work.

Hyper Utilities 17. This disk contains the great *HyperCard* stack, *StackStarter*, by famous BMUG member, Robertson Reed Smith. *StackStarter* is a collection of sounds, buttons, fields, controls and tools that you will want for the stacks you build or customize. It is much like sculpting marble. You start with a block of marble and cut away the parts that aren't a part of the sculpture. With *StackStarter* as a foundation, you remove resources and options until your new creation is finished. If only it was that easy!

Sounds 11. This disk has the fantastic *SoundMaster* CDEV and a bunch of sounds (surprise!). A while ago there were a bunch of sound gags for the Macintosh. Some made your Mac sound like an old manual typewriter, while others, like *MacPuke*, made a retching noise when a disk was ejected from a drive. *SoundMaster* extends this concept and allows sounds to be tied to most common activities, startup, shutdown, restart, disk eject, disk insert and on...The volume and sound playback rate can be set for each sound too. It's a lot of fun—and easy to turn off.

Games 2. *Dungeon of Doom* continues to be the shareware game of first choice. Pick up weapons, magic potions and more to beat the dwellers (monsters and worse) of the many levels of the Dungeon. The disk has loads of other fun games too, including Concentration, Daleks, Hearts and more!

Does your ImageWriter LQ have an on/off switch? Do you think that the Apple design team meant you to use the switch? Think again.

WildCard ∞. With so many great disks to choose from, how could I pick just five? If you have young children try disks: Games 19, Hyper Games 5h and13h. If you're lucky enough to own a Mac II, try some of our fifteen Mac II only disks: Paris 11 (Color Cursor and fun stuff) and Paris 15 (includes *SeaView Haven*, a better-than-commercial color solitaire game). Just bought an ImageWriter? Try some super fonts on Fonts 12 and 13.

Come and join in the dialogue every Thursday evening, 6:00 - 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus.

The It's Not A Bug—It's A Feature Department

Does your ImageWriter LQ have an on/off switch? Do you think that the Apple design team meant you to use the switch? Think again.

Many ImageWriter LQ owners have noticed that their ribbons are printing only on the top part of the ribbon. This causes the ribbons to wear out **very** fast. Better revise the ribbon budget!

Sometimes this is due to a problem with the ribbon cartridge. The flat tab on the side of the black ribbon cartridge, closest to the printer control panel, may be broken (or about to break off). This tab pushes a switch on the printer that says, "I'm a *black* ribbon—not a *color* ribbon." That switch allows the whole ribbon to be used for printing. If the tab is missing, or loose, only the top band of the ribbon is used for black, since the printer thinks the cartridge installed is a color ribbon.

Warning: Reading the following explanation may cause short term grinding of the teeth, hypertension or a sudden release of verbal expletives!

BMUG is an educational non-profit corporation, promoting the exchange of information. Like any growing organization it is many different things to its 6000+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh™ but now includes other makes, models and operating systems, including the NeXT best thing. BMUG supports many Special Interest Groups (SIGs), a five-line BBS, help-line, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 350+ page book that we call our "newsletter." Our motto continues to be: *We're in the business of giving away information.*

The BMUG HelpLine, (415) 849-HELP, provides technical assistance and telephonic handholding during business hours (10:00 a.m. - 5:30 p.m.). If your question can't be answered on the spot, we try get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

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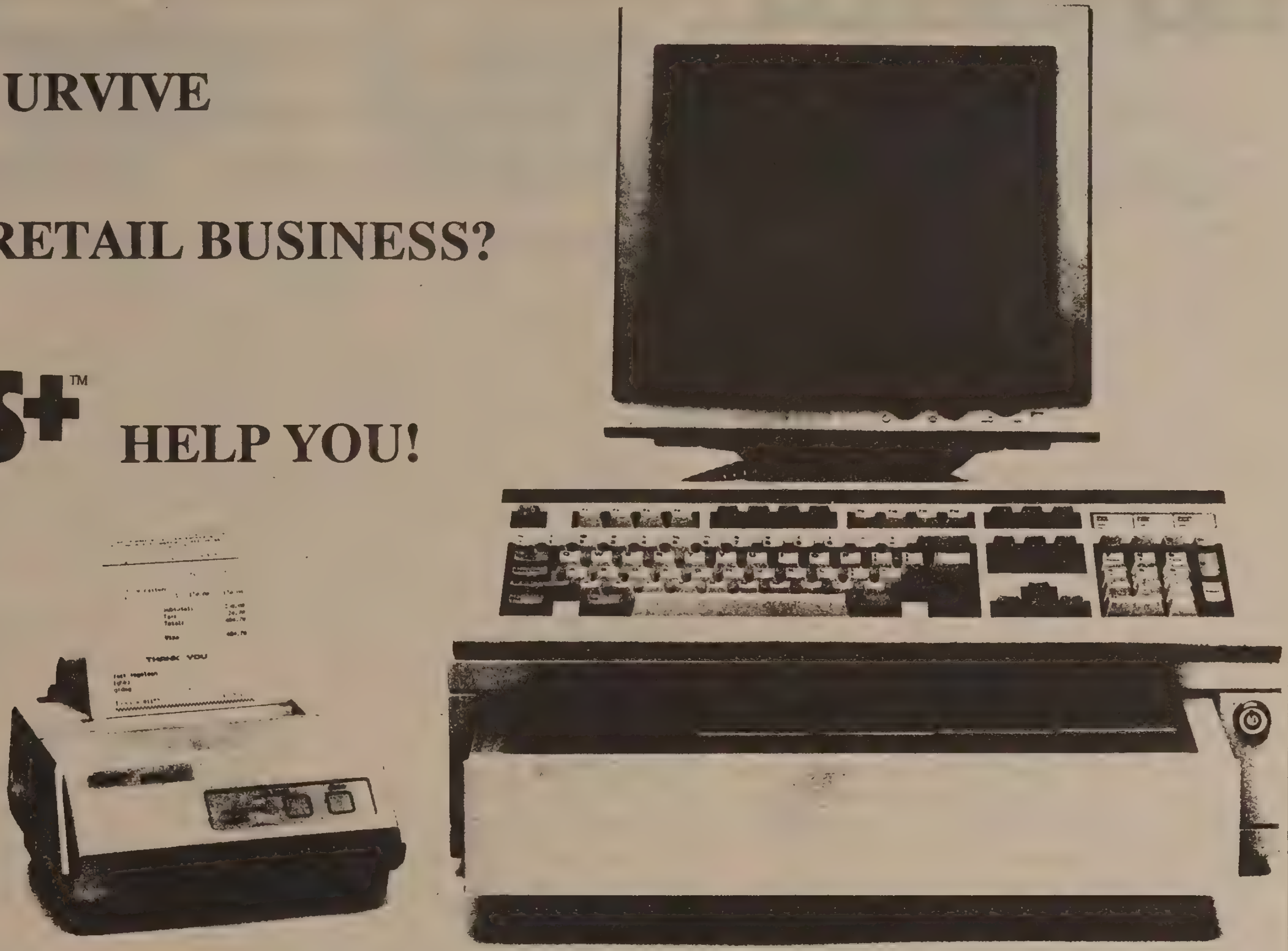

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BMUG has one of the most up-to-date, comprehensive software libraries around with 300+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks.

A more likely reason is the use of the **on/off** switch. For the black ribbon to properly shift bands, the ImageWriter LQ should **never** be turned off.

When the printer is turned on, the default position is on the first (top) band of the ribbon. When you print a multi-page document, page one is printed on the first band, the second page on the next band, and so on. If the printer is not turned off, the next document will be printed where the last job left off. This uses the ribbon up evenly.

Why did they supply a switch when it shouldn't be used? Perhaps this is another example of the running BMUG joke—*it's not a bug; it's a feature.*

I Never Promised You A 6.0.2 Rose Garden

Developers get a pile of paper every time Apple changes its operating system. These documents, or *Change Histories,* outline what's different, what bugs from the last release were fixed, and what's **not** going to get fixed this time around.

One of the *wait until next time* bugs involves the ImageWriter LQ and the LaserWriter IIsc. Here's what the Cupertino crowd says:

"When printing stylized text (shadow or outline) in large point sizes on the ImageWriter LQ and the LaserWriter IIsc, some characters may not print. This problem only occurs with a Mac Plus, or SE, and varies depending on the application, font, font style and font size being used. When this happens, Apple recommends plain text." Thanks a lot!

How much do you want to bet this doesn't happen on a five megabyte Mac II? Join the RAM Corps and see the styles.

Just because BMUG doesn't have auctions, pledge nights, beer tastings or telethons doesn't mean we don't want your donations! BMUG is still an educational non-profit corporation run by volunteers. If you can give a cash donation—wonderful. We're also looking for some more Macintoshes, MS-DOS machines and office equipment. If you want to help out and volunteer—fantastic.

Everything Else

BMUG has one of the most up-to-date, comprehensive software libraries around with 300+ double-sided disks filled with the latest versions of public domain or shareware programs and *HyperCard* stacks. New disks are unveiled almost every week at the Thursday general meeting.

Our BBS offers the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet; by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network. With our multi-line capability you are now able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

Upcoming Events

November 17:	**BMUG's MacTurkeyFest** (previously, MactoberFest).
November 24:	National TurkeyFest. **No Meeting!**
December 1:	Artificial Intelligence night & Human Intellect Systems.
December 8:	*Springboard Publisher* (Page Layout), *GigaCell* by Gigamation (hard-disks) & Dynamic Software's *Chaos* (fractel stuff).
December 15:	**Call for Information.**
December 22:	**No meeting!**
December 29:	**Call for Information.** ☐

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HYPERCARD

BY BIRRELL WALSH

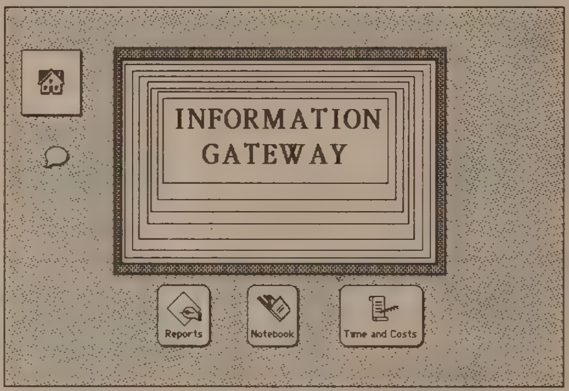
HyperCard Meets Total Information Overload

This month we talk about what happens when you get too much information in too little time. You can't just chuck it over your shoulder. You have to deal with it. Perhaps you have been awarded a new sales territory in a state you have never visited. Or your company has to consider which of five sites to move to, and you are the lucky person who gets to "look into it." You suddenly have to do a lot of research, cross-reference the information and present it. Total Information Overload, or TIO.

All this became real to me this fall when I enrolled in a mathematics class through UC Berkeley's Concurrent Education program. Berkeley has one of the finest mathematics departments in the United States, filled with sharp students and demanding professors. The course had been a dream of mine for 20 years, but I had never taken the prerequisite Analysis and Group Theory. The course was perfect example of Total Information Overload. In my struggle to stay afloat I discovered simple *HyperCard* stacks as a TIO antidote.

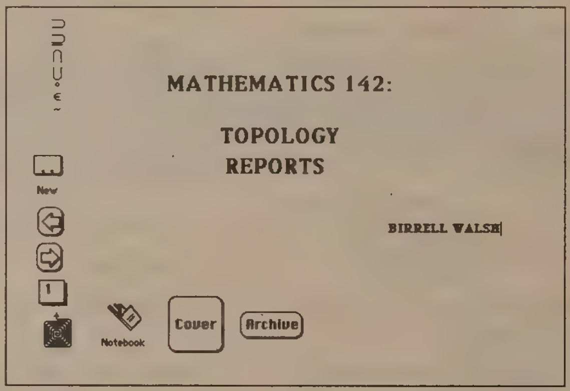
The problem with a lot of new information is that you must deal with it in several ways:

- You have to capture the information as it comes in. That is no easy task with unfamiliar information. If you are learning about a new sales territory, you have to get down a lot of data that is entirely strange to you. A site selection will deal with a number of factors you can't even name yet. An academic class will have a new jargon. It is difficult to use a traditional database in this situation, because you do not yet know how you will want to structure the information. You don't even know if the information will be better transcribed in words or in pictures.
- You have to keep track of the information and cross-reference it. You want a lot of "q.v."'s, those little notes to "see also..." some related information. You may need to note that four counties in your new sales territory have a joint purchasing agency (q.v.). I needed to remember that a topological quotient space is related to equivalence classes (q.v.). The site selection committee has digitized an earthquake danger map, and you want to refer to it from many different sections (q.v., q.v., q.v...) of your notes. Because you want to be able to cross-reference (and use graphics), a traditional word processor is inadequate.


INFORMATION GATEWAY

The Gateway's Entrance Card: This card leads to three other stacks in the Gateway Folder.

> **If you are in Total Information Overload, you do not have time to do top-down design. You make a quick-and-dirty system to help you keep track of incoming information. Later, when there is more time, you add buttons to link ideas or to automate what you do repeatedly.**

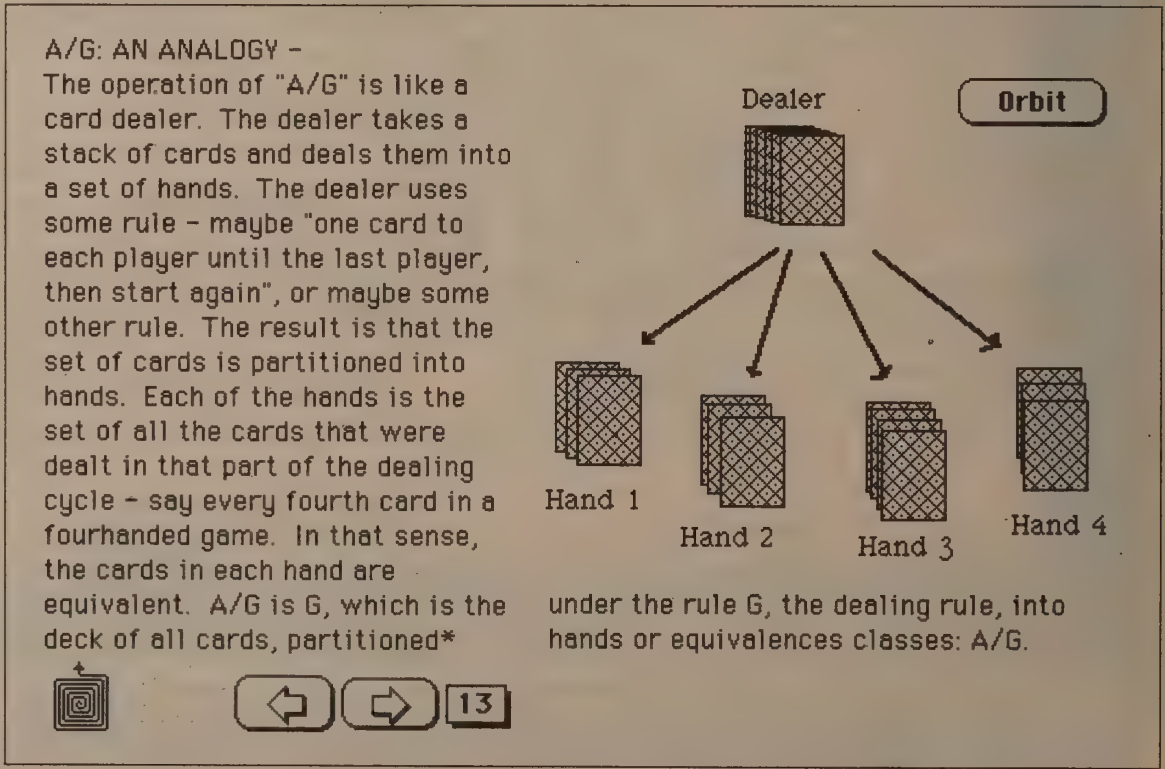

MATHEMATICS 142:

TOPOLOGY REPORTS

BIRRELL WALSH

The Report Stack: All of its buttons are hidden by pressing the "Cover" button. Then each card becomes a half-page of the report.

Graphics and Text: are easily mixed on a card, so you can use whichever is appropriate for your information.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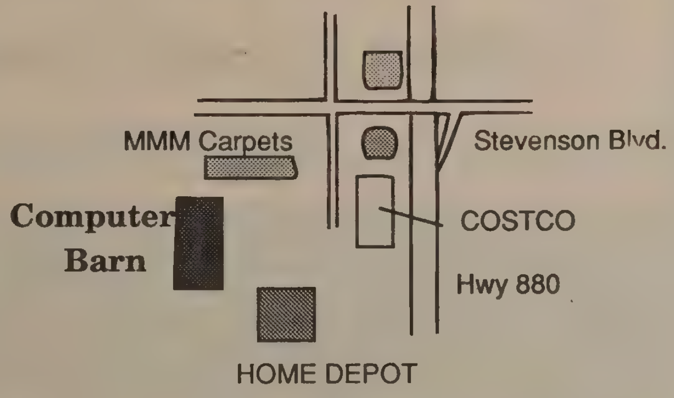

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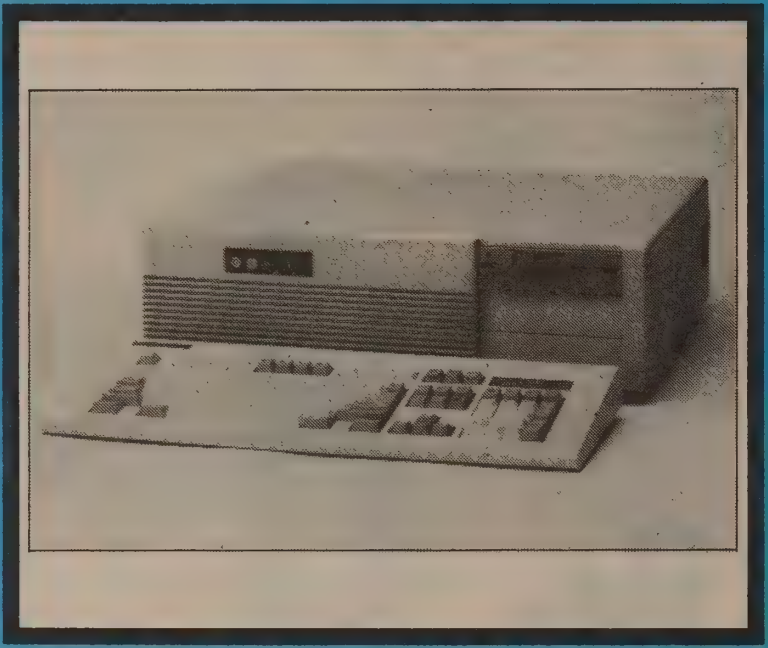

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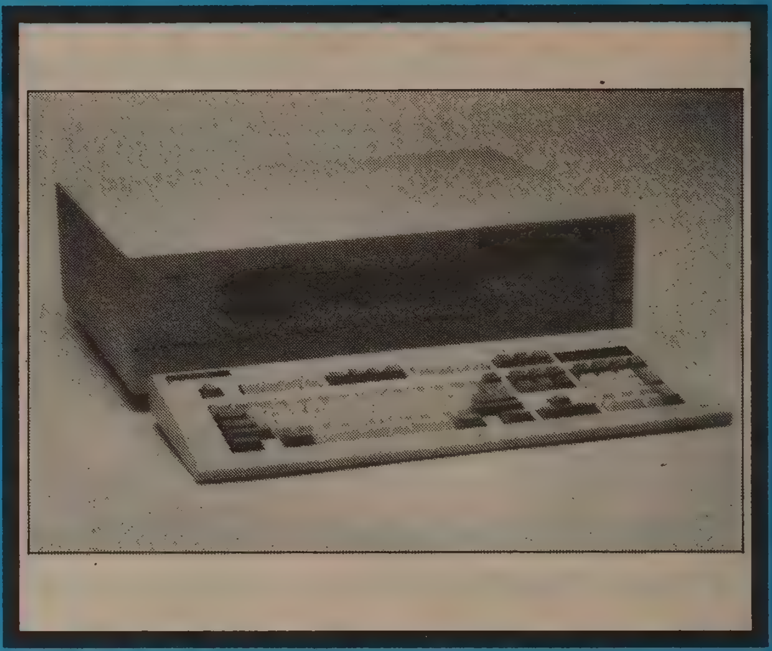

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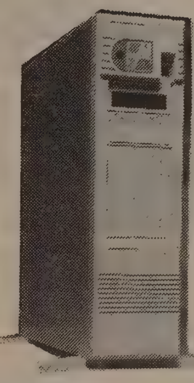

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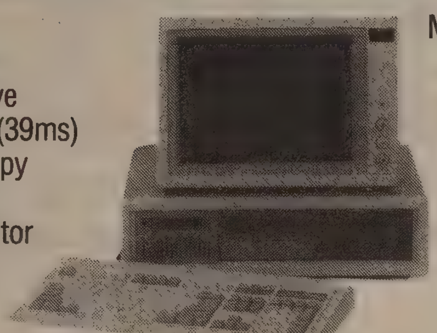

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- You have to commmunicate the information to others— again, in text and pictures. For a businessperson, this means making reports, memos and presentations. For a student, it means doing homework and papers. You have to rearrange and tidy up the information for quick and handsome presentation to other people.

HyperCard To The Rescue

I discovered that *HyperCard* works well for all three purposes. The stacks that I developed are on the WELL as "gateway.pit," a Pack-It file stored in the Library section of the HyperCard Forum. The WELL can be reached at 332-6106, among other numbers —there is a charge to use it. Type "g hype" at any ok prompt in the WELL, then type "lib" to reach the library. The stacks in "gateway.pit" are in the public domain. You can download them, modify them and make them your own.

My first step was to make a single-card "Information Gateway." It serves as an entry to a Notebook stack, a Log stack and to what I called the Reports stack.

In the Notebook stack I store all the notes, random facts and ideas I have about the topic. On the front card of the stack are buttons that lead to each card or series of cards. There is also a "New Topic" button. When you click on it, a dialog box asks what you want to call the new topic. The script creates a new card with that name, and a new button with that name appears in the black box on the front card. When you press that button, you are taken to the new topic card. *HyperCard* handles indexing your topics for you.

The Log stack has two cards for running totals of expenses or time spent on a project. Any project for business needs to track resources, and this stack lets you do so. Each has a summing button to get the current total. I also made some auto-entry buttons for my most common items. With this stack I have up-to-date accounts of costs and time-investment.

In the Report stack—unrelated to Activision's *Reports* product—you can use both text and graphic tools to build your presentations. Many times I designed a diagram to be on a page with text, and then discovered that I did not have room for everything. Because of *HyperCard*'s elastic text fields and movable graphics, I was able to resize and reposition the text and graphics repeatedly, experimenting on the page until everything fit.

The buttons on the page were a problem. They were useful when I was working in *HyperCard*, but they did not belong on the finished page. The solution was to design a button script which covered them with text fields. The fields were empty, used only for their opacity. As long as I was designing such a button to prepare the page for printing, I included a script in it which put my name, a page number and the date at the bottom of each even-numbered card. On the odd-numbered cards, the same field was filled with a blank. You can insert new cards with the "New" button, and the "Cover" button script automatically renumbers the cards.

Is the result a shiny PostScript output? No, it is a bit-mapped dot-matrix product. It looks quite presentable if printed on an ImageWriter II with a good ribbon. It is the sort of product that one will use at school or for intra-corporate memos, designs and proposals.

The blessing of *HyperCard* is that you can design your system as you go along. If you are in Total Information Overload, you do not have time to do top-down design. You make a quick-and-dirty system to help you keep track of incoming information. Later, when there is more time, you add buttons to link ideas or to automate what you do repeatedly. The system grows as your understanding of the issues grows.

In short, I used *HyperCard* to help me sort through an overwhelming amount of new information. I think it saved me—I'll know for sure in December, when the course ends. Try out the stacks and let me know your experience.

Next month: some *HyperCard* presents for the last-minute Christmas shopper. ☐

BULLETIN: Is Apple glad it released HyperCard? You bet your sweet operating system they are. The October 18 MacWeek (quoting the Hayward Daily Review) reports Apple just signed a $35,000,000 deal with Renault. What's Renault going to do with the Macs? Every Renault dealer will have a Hypertext/CD-ROM technical manual. The clincher—Renault was going to go with a DOS system until they saw HyperCard.

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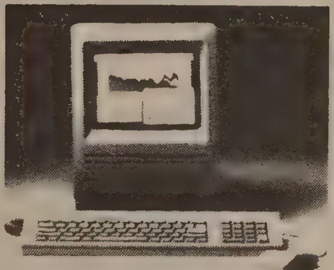

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BY ROBERT BEAUCHAMP

PageMaker For The PC

The New Kid Is Big And Demanding, But Also Effective

Anybody with a Mac seems to have a copy of *PageMaker* somewhere within easy reach. And just about any Mac can run some version or other. Even the newest version, 3.0, only needs one megabyte of RAM and a hard disk.

Very few people with an IBM or compatible, however, will have the internationally renowned desktop publishing program. Or even know that a PC version exists. And more likely than not they won't ever see it on their PC. Unless their PC is an AT, or a 386.

In the DOS world's quest to do everything it can to look like a Macintosh, this latest release from Aldus succeeds where others have failed. But in doing so, it has shown the true cost of such imitation.

Hardware Requirements: Not For Lightweights

The minimum requirements for using *PageMaker* on the PC, also named 3.0, are extensive and expensive. It needs an IBM AT compatible or better; that is, a computer with a 286 or 386 chip. It will, however, work on a IBM PS/2 Model 30, 50, 60 and 80, regardless of its processor.

You will also need an EGA, VGA or Hercules graphics card and a compatible monitor to run the Microsoft *Windows* 2.0 graphical interface that *PageMaker* utilizes. If you don't have *Windows* 2.0, *PageMaker* supplies a run-time version.

And don't forget the mouse and the hard drive.

The memory requirements are pretty hefty as well. *PageMaker* demands 640K *minimum*. I personally wouldn't try it with anything less than 1.2Mb.

Is It Worth It?

Clearly *PageMaker* 3.0 for the PC will never be the popular application its Macintosh-based, older and slimmer brother has become. Especially at the $795 list price. But for those who do have an AT with a graphics card and lots of memory, the question remains: is *PageMaker* for the PC worth it? The answer, almost without exception, is yes.

Users of *Ventura Publisher*, *PageMaker* 's primary competition on the PC, are probably snickering. There are a lot of happy and loyal *Ventura* users out there who would say all this worry about memory, etc. is for nothing, just buy *Ventura*. *PageMaker* for the PC has one thing, however, that *Ventura Publisher* does not, and that's a completely compatible version on the Mac. And *that* means connectivity.

"You Don't Have To Do Anything To It"

When the programmers at Aldus designed the new *PageMaker* versions, connectivity was very much on their minds. I asked Ben Bauermeister, Aldus representative and *PageMaker* wizard, whether you could transfer files from one *PageMaker* to the other. He said, "You sure can. That's one of the greatest things about it. You don't have to run it through a converter. You don't have to do anything to it. All you have to do is move a binary copy of that file from a Mac disk to a PC disk, and you can readily open that file on the other side."

He went on to say that you should be careful to give a DOS file name to a Mac file you're moving to a PC. It also helps, he added, to add the .PM3 suffix to the file name so you can open *PageMaker* by opening the file.

I found that when transferring a file from the Mac to the PC using *LapLink Mac*, you needed that .PM3 suffix to carry along the *PageMaker* formatting codes. If you use the *LapLink* option in renaming the file being transferred to the Mac and leave off the suffix, you'll get a screen full of cryptic and useless characters.

As I mentioned in last month's column, *PageMaker* is the perfect venue for transferring your favorite graphics from the Mac to the PC. According to Ben, it's best, if you're going to be transferring a lot of publications back and forth, to stick to the TIFF (Tagged Image File Format) and EPS (Encapsulated PostScript) graphics formats.

In order to convert your Macintosh graphics formats and keep track of your clip art you'll want to get *The Curator* from Solutions International. You'll also want to get its counterpart for *Windows*, *Scrapbook Plus* from T/Maker, for the same reasons. These two tools not only make your connectivity chores easier, they also make working with *PageMaker* faster and easier.

For those who do have an AT with a graphics card and lots of memory, the question remains: Is PageMaker for the PC worth it? The answer, almost without exception, is yes.

The Tortoise And The Hare

In the world of computer-aided page design and layout, speed is important. What's the point of doing it on the computer, after all, if you can do it faster by hand? There are a couple things you can do to speed up *PageMaker* on the PC to point is comparable to running it on a Mac Plus.

The first thing is to expand your PC memory to at least 1.2Mb. This is the same memory found on a Mac Plus. As you probably know, however, PCs have this nasty habit of not being able to use more than 640K at the same time. How, then, do you use that extra memory?

Aldus, doing everything right, takes advantage of a program called SmartDrive that comes with *Windows 2.0*. SmartDrive is designed to help you take advantage of your expanded and extended memory. When I installed my copy of *Windows* a while back, I tried to figure out how to use SmartDrive. After a couple of attempts, I set it aside, never to pick it up again.

The *PageMaker* documentation, ironically, gives a clearer explanation of how to use SmartDrive than the *Windows* docs. Since both companies are in the Seattle area, Microsoft should have Aldus' tech writers over for lunch and a few lessons in documentation writing. (I know a lovely place overlooking Puget Sound.)

The second thing you'll want to do, and I know this will make all those who just shelled out a couple hundred bucks on a VGA card cringe, is make your *Windows* interface black and white instead of color. Color is beautiful, but it takes up

---

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> **PageMaker for the PC has one thing that Ventura Publisher does not, a completely compatible version on the Mac—and that means connectivity.**

RAM. Besides, my puritanical heart says, you're primarily designing black and white documents anyway—who needs color?

To make your screen black and white you'll need to change the Display parameters in the WIN.INI file located in the *Windows* directory. Simply double click the WIN.INI file and it will come up in the Notepad desk accessory. Under where it says **[DISPLAY]** it will say **colors=8.** Change the eight to a two. Save the file and reboot. You should have a duller but faster environment to work with.

You should take note that this tactic is not documented in either the *Windows* or *PageMaker* manuals. I learned it from the documentation that came with a graphics card. When I tried to install *PageMaker* on an IBM PS/2 Model 50 using the run-time version of *Windows*, I could not duplicate this feat.

It is important to remember, when editing your WIN.INI file, to make a backup copy in case of mistakes. If you are successful, however, you'll feel like a real hacker.

Stepping Up To Stepping Out

While doing these things will bring your speed up to about that of a Mac Plus running *PageMaker*, there is something you can do with your Mac that leaves even a souped-up PC in the dust.

The program you'll need if you use *PageMaker*, *Excel* or any other screen-hogging application on the tiny Mac Plus screen is *Stepping Out II* from Berkeley System Design. *Stepping Out* creates a virtual big screen that allows you to zip around the entire *PageMaker* window in a fraction of the time it would take you to scroll the same distance.

The new version of it is compatible with MultiFinder and the Mac II. It does take up more memory than the old version, as it now is accessed through the Control Panel, but is still a major improvement in terms of speed.

This inexpensive program adds, I figure, at least a thousand dollars to the value of your system. And that's not including the time (translate money) you save while using *PageMaker* with *Stepping Out.*

And there you have it, the last installment in a three-part series. A happy ending to a long and complicated story of graphics, desktop publishing and connectivity. For the first time in four months I don't know what the next column will be about. Any ideas? Write or call, we look forward to hearing from you. ☐

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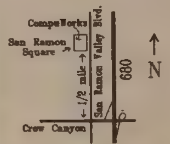

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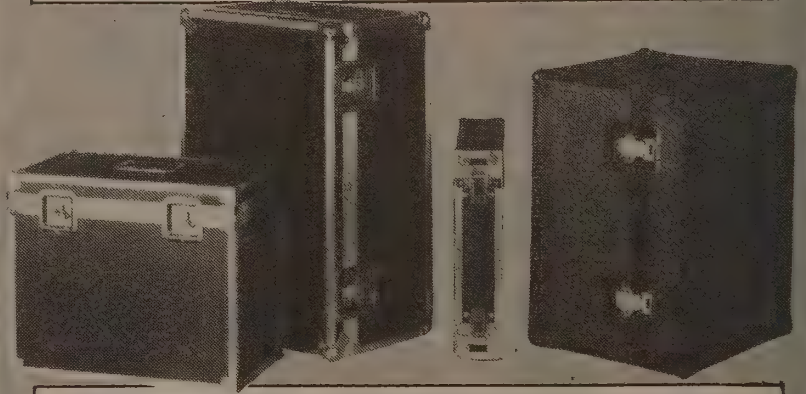

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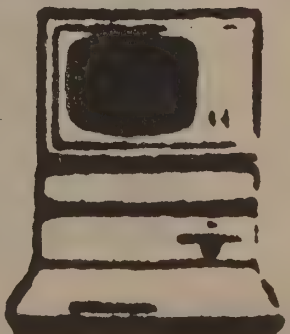

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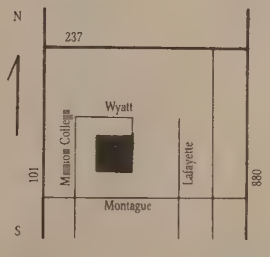

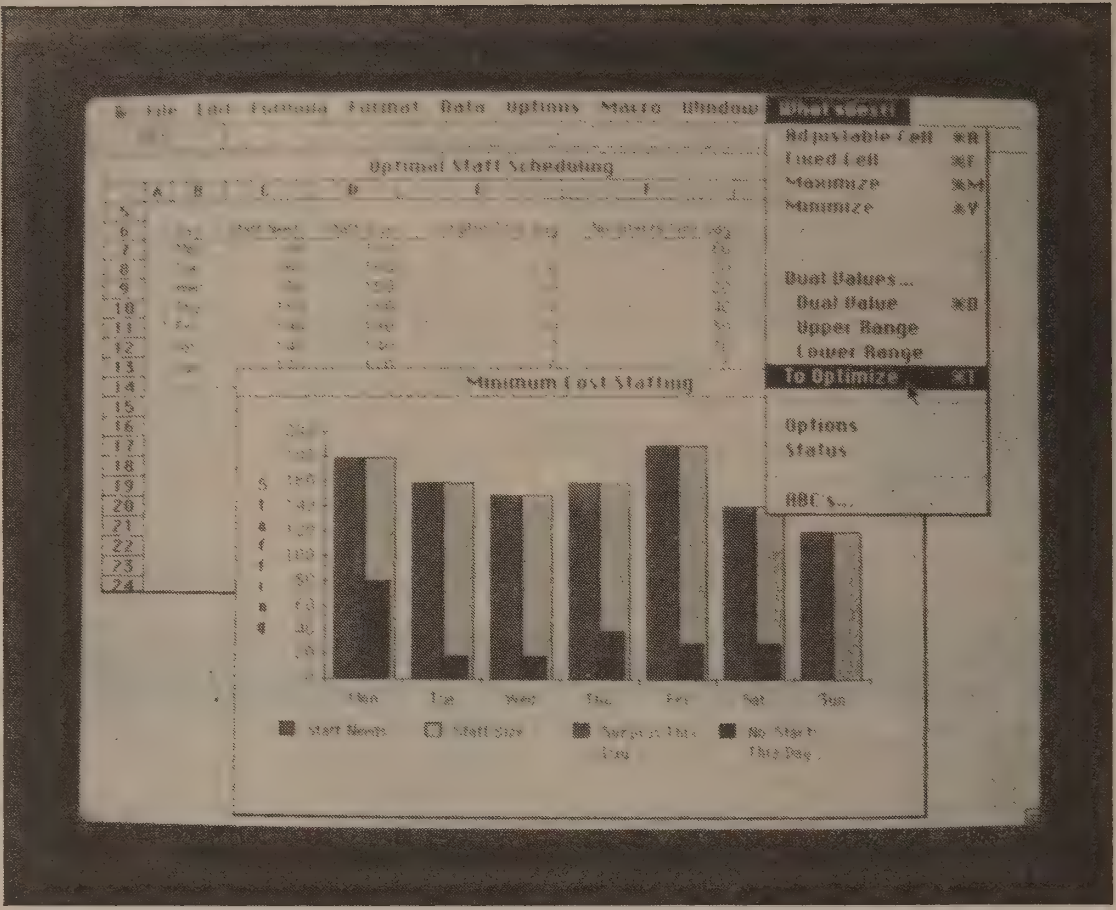
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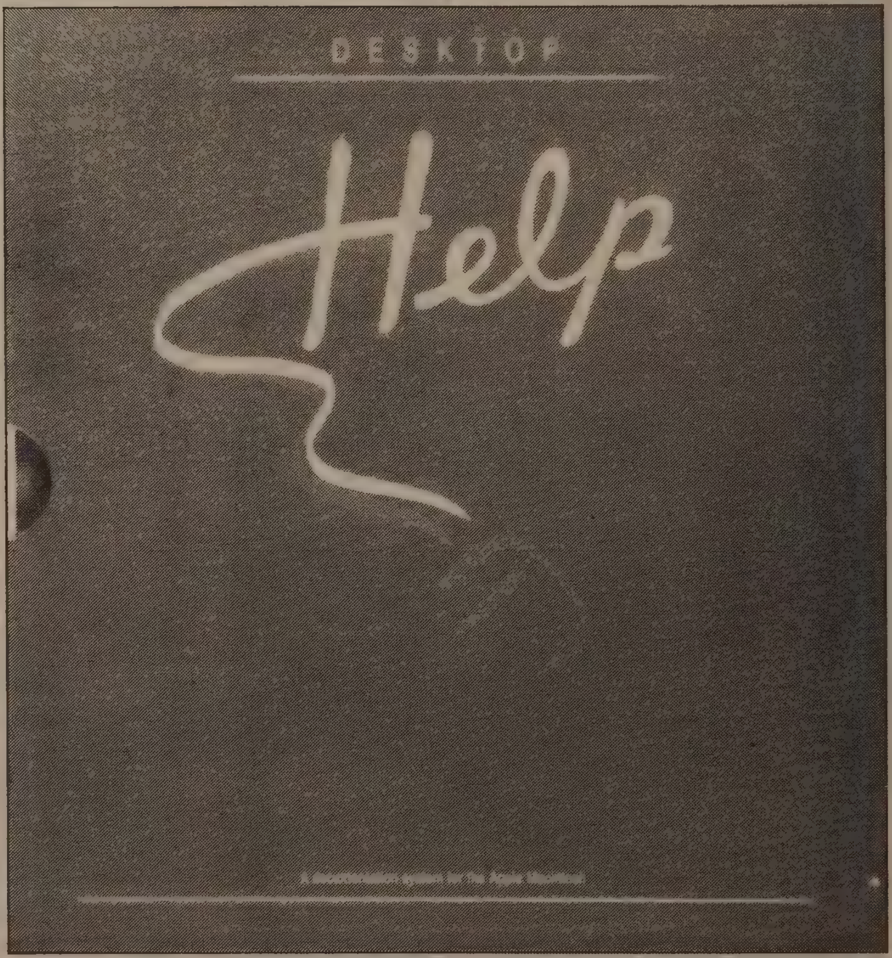
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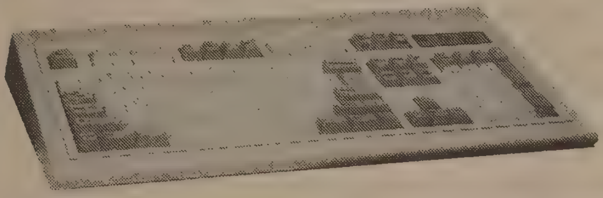

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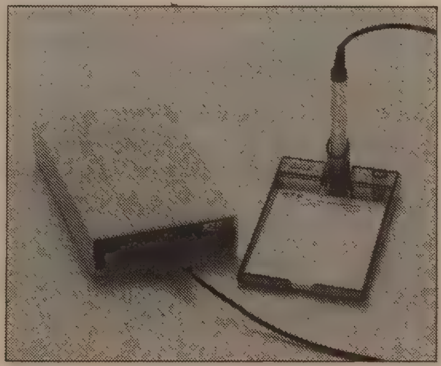

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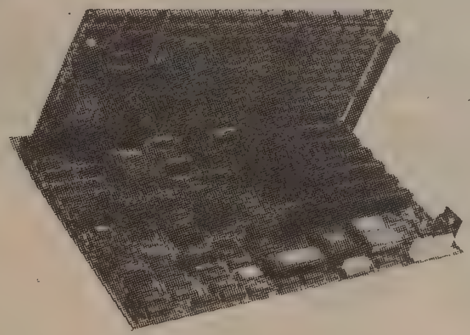

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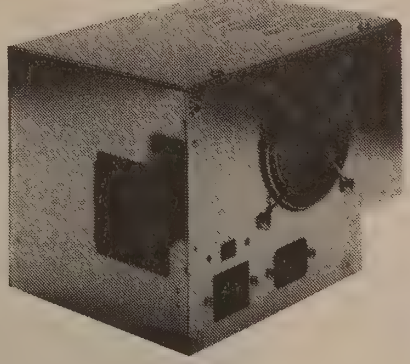

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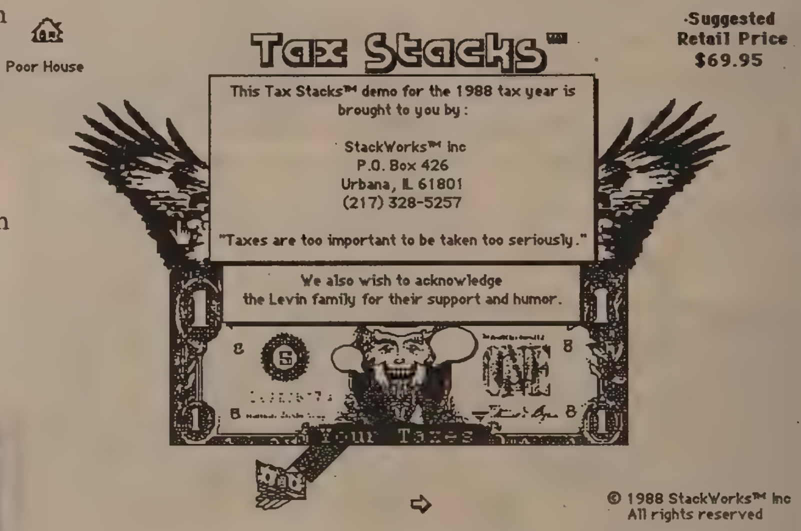

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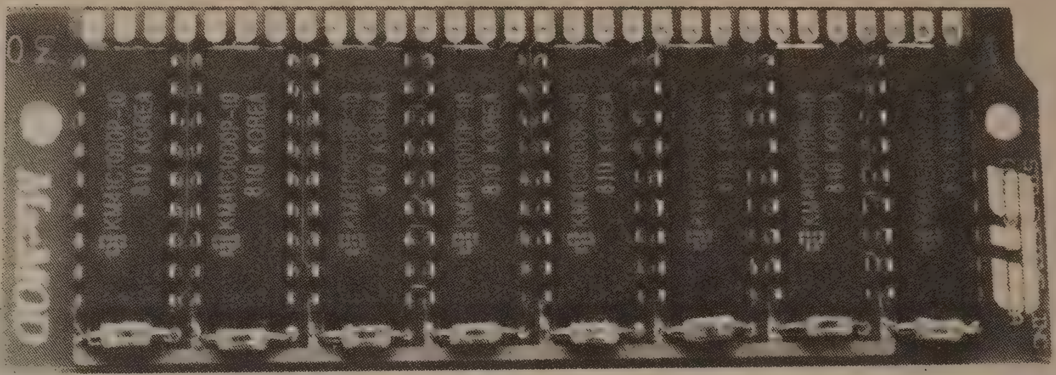

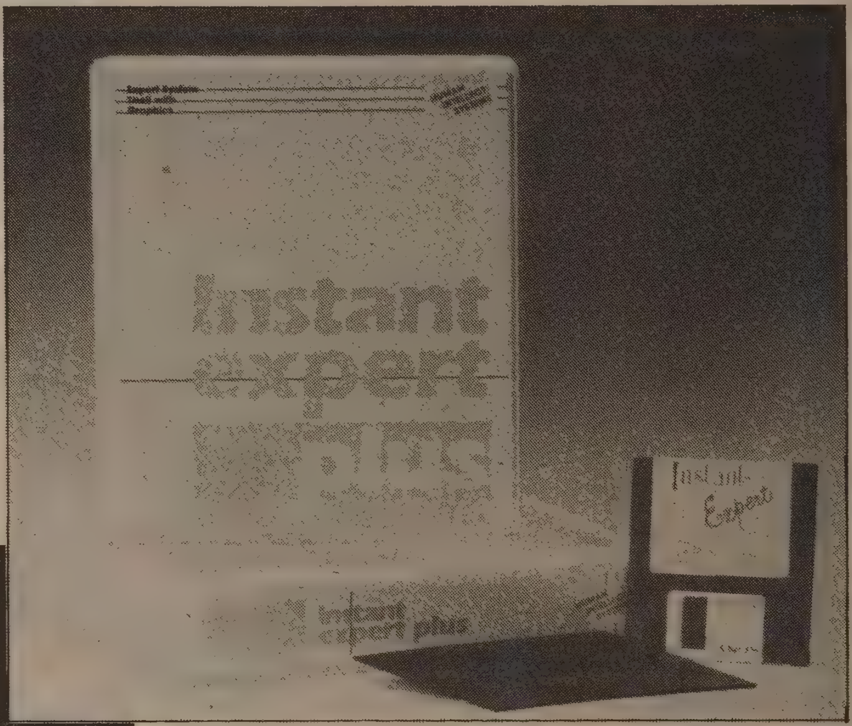

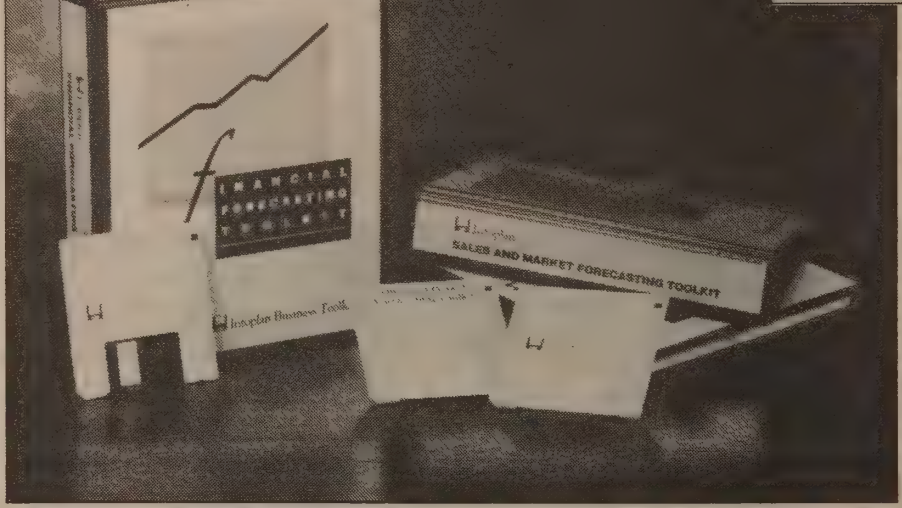
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TELECOMMUNICATIONS

BY BROCK N. MEEKS

QPSX: A Communications Revolution

QPSX allows very high-speed integrated transmission of voice, data and graphics over virtually unlimited distance.

The comments begin with whispers in backrooms and articles in obscure technical journals. Sooner or later the phrase "revolutionize the technology" is proffered. When that happens skeptics are given what amounts to high-tech cannon fodder, futurists' eyes glaze over and columnists have a platform for launching any of several differing opinions. A revolutionary technology pumps adrenalin into the lifeblood of high-tech speculation.

The latest whispers in the telecommunications industry are turning into public announcements; the latest entry destined to revolutionize the industry is something called Queued Packet Synchronous Exchange, or simply QPSX.

As a technology, QPSX is the classic stereotype of a good idea getting better. The technology already has a hip acronym (QPSX) and has added another, MAN (metropolitan area network) to the existing list of LAN (local area network) and WAN (wide area network). The good part: QPSX implementation is simple; it meets a specific need; it'll make someone a lot of money. The better part: it's a reality, being tested and used in real world applications. The best part: it's now being considered as a possible IEEE standard (802.6).

The main advantage of QPSX is that it allows very high-speed (up to 150M-bits per second) integrated transmission of voice, data and graphics over virtually unlimited distance; it also makes extremely efficient use of fiber-optics.

"The technology represents a technological breakthrough as significant to telecommunications as the development of the silicon chip for the computer industry," says QPSX President John Farrell. "Until now, different types of telecommunications equipment couldn't share the same wiring and switch gear. QPSX allows complex messages to be transmitted faster and more easily."

From The Land Down Under

Developed by the University of Western Australia's Department of Electrical and Electronic Engineering, QPSX was the graduate project of 23-year old wiz-kid Robert Newman. The idea came to him after four months of investigating (he says "slaving over") various ways of integrating voice and data. "The answer was a computer concept, a bus," says Newman.

The basic problem: how to write a fixed time-frame sub-divided into smaller units for voice and data. "We sampled the telephone traffic every 125 microseconds into dedicated subdivisions. Whatever capacity was left over we left for data," says Newman.

The theoretical problem identified, Newman then had to deal with how to handle competing data calls for the holes in between the telephone packets on the bus. He had to find a way to queue the computer traffic onto the bus. The answer came as a "bit of inverted logic," says Farrell. The bus is a two-track loop; each loop travels in a different direction.

Farrell explains the concept with an analogy: "A person tries to get on a train that is full, but so are others at stations down the line. The problem is how to get each person on the train without jumping queue. The answer is to send a message—a marker if you will—on the train going in the other direction to say, 'Hey, I'm waiting to get on here.'"

The dual bus architecture of QPSX is immune to network congestion that impedes traditional ring architectures. The QPSX signaling, multilevel priority structure, synchronization and signaling provide an effective filter against congestion. It consists of two lines, or buses, carrying traffic in both directions. Each node connects to both buses and has read and unidirectional write capability. Every node can communicate to every other node sending information on one bus and receiving on the other.

Ring architectures, by comparison, do not pass data through each node. Nodes on the bus read addresses of passing packets and copy data if there is an address match between the node and the destination address with the packet. This takes time and creates what amounts to a traffic jam if network traffic is heavy. If it gets too heavy, the network crashes.

With QPSX, each node can handle packet or channel-switched communications (asynch or synchronous). Data slots not dedicated for synchronous communications are available for packet switching; bandwidth is determined by demand. A LAN's packet-access protocol has no record of network loading; only when a packet is ready to go does it ascertain the information required for transmission.

QPSX, however, allows each node to keep a current-state record of the number of packet segments across the network awaiting access. When a node has something to transmit, it automatically knows exactly where to queue the message for transmission and where to place it for immediate access on the bus. This scheme means that capacity is *never* wasted; minimum access delay at all levels of network loading is guaranteed. Access is uniform, thus guarding against "network hogging." The entire process is implemented through simple logic hardware at each node.

"A similar situation might be found in time-shared computing," says Farrell. "In a time-shared environment, queued jobs cyclically receive a share of available CPU time. A token ring setup uses non-segmented access that is analogous to batch processing."

Farrell further notes that the multiple packets sent on a QPSX network are guaranteed against transport or switch failure and, "most important: there are built-in safeguards for the sender against accidental or malicious intervention that would deliver packets to none but the correct destination." Also, a company would not receive packets from sources not authorized by it.

The dual bus architecture of QPSX is immune to network congestion that impedes traditional ring architectures.

First US Test

The QPSX MAN can use existing wiring at the user's premises and will connect to existing phone switching equipment. At the optimum end, users are able to share voice, data or video on a common network of 150 megabits each way. Not only would it connect all voice and data transmission, but a QPSX network can connect all terminal devices to the local phone exchange and out to the rest of the world, if the physical hardware were connected.

Currently, Bell Atlantic plans the first test of such a network. At this writing the ink is still drying on the agreement. The QPSX MAN will be installed and operated by Bell of Pennsylvania, a Bell Atlantic subsidiary, for an undisclosed customer in Philadelphia using equipment provided by QPSX. It is the first test outside of Australia and "an important milestone toward its international acceptance," says Farrell.

The Bell of Pennsylvania MAN trial will be based on optical fiber technology and will be a very high-speed (45 megabits per second), switched wide area data communications service. Initially, the trial will connect several sites owned by one customer.

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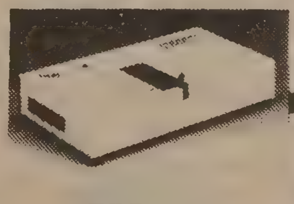

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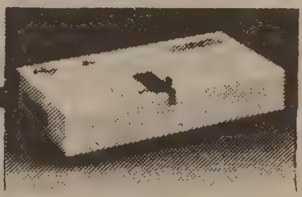

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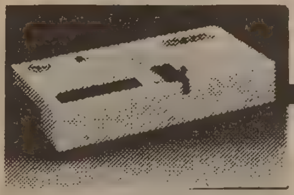

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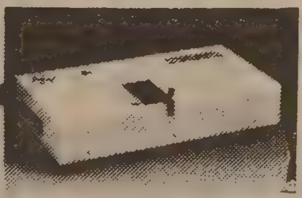

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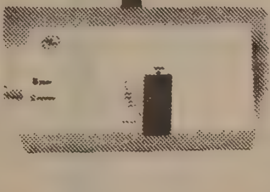

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The actual tests don't ramp up until sometime early in 1989; however, the technology will be used to link cities on opposite coasts in Australia sometime later this year.

According to Farrell, MANs promise a number of benefits to users:

- Expand the number of users in an organization who can communicate on a LAN, facilitating use of LAN applications, which can range from electronic mail to computer-aided design.
- Increase the speed of communications between users on different LANs; for example, a 100-page manuscript can be sent from one LAN to another in about one-tenth of a second.
- Save organizations money by increasing the number of users who can share various devices, thus avoiding the purchase of new hardware and software.
- Enable organizations to manage the growth of LANs at various locations by letting them mix and match resources as needed.

As an example of the far-reaching "revolutionary" design, Farrell added, two doctors on opposite sides of the world could discuss a patient's medical emergency on the telephone while the patient's medical records, including x-rays and CAT scan pictures, are transmitted virtually instantaneously over the same line. "It brings the world one step closer to becoming a global electronic village," he said.

"QPSX technology provides a switched broadband network service, well suited to application in a public setting," said Dave Douglas, Bell Atlantic assistant vice president for product management. "As with any switched network, users on the individual LANs connected to the MAN can use and pay for high-speed capacity of the MAN only when needed."

Douglas' comments are particularly telling given today's telecomm environment. Today, users needing to connect LANs at two or more locations have to acquire point-to-point high speed private lines, such as T-1 or optical fiber facilities, and pay for them full time even if their actual usage totals only a few minutes each day.

The trial of QPSX by Bell Atlantic is viewed as a "stepping stone" to broadband ISDN, according to Bell Atlantic engineers. In most of the whispers I've heard, the telephone companies are very interested in the Bell Atlantic trial. But, the phone companies aren't looking at QPSX as a replacement for narrowband ISDN services now being experimented with. Instead, Farrell says that telephone company interest lies in "high-speed applications similar to broadband ISDN capabilities." Because broadband ISDN is still in the standardization process and won't be complete until 1990, QPSX offers a "workable interim answer" for broadband applications. "It is a stepping stone between narrowband and broadband ISDN," Farrell said.

Long Live The Revolution

Revolution, by definition, creates change. It thrusts that change into the mainstream. What happens down the line is ultimately up to those in charge of the revolution. Revolution in the information age is no less dramatic.

The QPSX revolution, it seems, is destined to change way we telecommunicate because it addresses technology not only at a practical level, but a cultural level, too. In the US, for example, the bulk of communications is centered on data traffic. In Europe, the national carriers are more concerned with video traffic. QPSX is a solution for both.

> **In the US the bulk of communications is centered on data traffic. In Europe, the national carriers are more concerned with video traffic. QPSX is a solution for both.**

Telecommunications is already changing the "business of business" by allowing companies to take advantage of economic incentives offered by some states. The current trend, seen as negative by some pundits, to move some corporate data handling tasks offshore might be thwarted by QPSX. This because a QPSX network would allow a company to set up several remote branches in economically attractive sites, sites within states that offer tax-breaks or the more ambiguous "quality of life" incentives.

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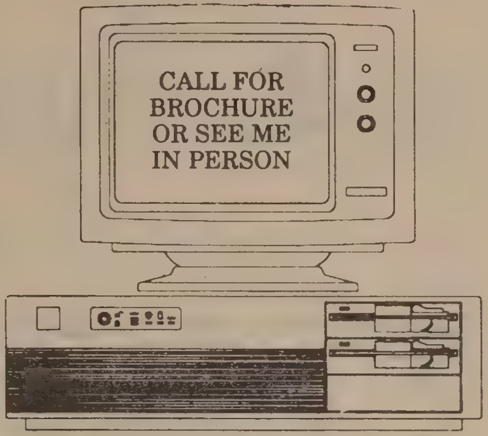

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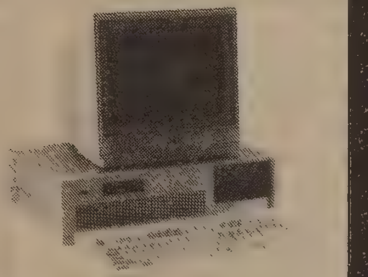

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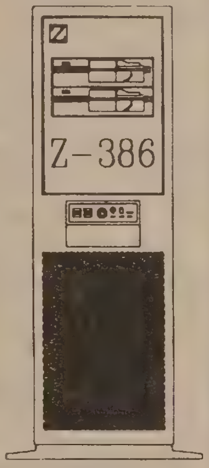

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APPLE II

BY MIKE MARKOWITZ

II Great Reasons To Celebrate

AppleFest, San Francisco, September 1988

Sinking majestically into obsolescence, benignly neglected by its Mac-minded makers, the Apple II series has been looking pretty sick lately. At AppleFest in San Francisco this Fall, it staged a surprising recovery. John Sculley unveiled a new computer, the Apple IIc Plus, and a new operating system, GS-OS, to revitalize the moribund Apple IIGS.

The IIc Plus

The IIc Plus has an internal 3.5" drive. It can run at a clock rate of 4MHz, which effectively triples the processing speed of many programs. Surprisingly, Apple's engineers were able to tuck the 20 watt switching power supply inside the case, eliminating the annoying external "brick on a leash." The downside is that you have to plug the computer into a wall socket; you can't rig up your own battery pack, unless you add some sort of DC to AC inverter.

The serial ports now use Apple's standard mini-DIN connectors, rather than the round 8-pin connectors found on the original IIc. The keyboard has been improved, with a big L-shaped Return key. The IIc Plus is four ounces lighter, and will carry a lower list price ($675).

The IIc Plus motherboard also provides connections for an internal modem. One company, Epic, was showing a combined 2400-baud modem and 256K RAM expansion card for the new machine. Other third-party vendors will offer hard disks that plug into the external floppy disk port, and flat-panel display screens.

Overall, the IIc Plus is a credible defensive response to the Laser 128 EX, the fast, low-priced, expandable Apple II clone that has captured a slice of the entry-level market since its introduction last year. The IIc Plus will probably be the last "Classic" Apple II (i.e., with the 8-bit 65C02 CPU chip).

In his keynote speech, John Sculley promised at least one more new Apple II within the next 18 months. This had better be the rumored IIGS Plus.

GS-OS

GS-OS, the new disk operating system for the IIGS, was the most significant event of the show. It marks a decisive break with the earlier versions of ProDOS 16—hence, the new name. "Old" ProDOS 16 was merely a shell that sat on top of ProDOS 8, and conducted all of its input/output transactions at the old Apple II's slow 1MHz clock rate.

GS-OS, in contrast, uses the full capabilities of the 65816 microprocessor chip, which runs at 2.8MHz. This may still seem pretty feeble, compared to the 16MHz of the Mac II, or the 25MHz of the latest Compaq, but raw speed is only a partial measure of computing power.

GS-OS displays a color graphic opening screen with an indicator showing the progress of the system startup. When the indicator reaches zero, the Desktop blossoms forth on your screen. The Finder is now much closer to the Macintosh look and feel: menus snap down quicker and windows zoom open and shut faster. Total loading time is much improved—only about 47 seconds. The new OS is compatible with older IIGS programs that conform to Apple's design guidelines. Programs that require a lot of disk access will run much faster.

There are icons for several new device types, including CD-ROMs and hard disk partitions. There will be File System Translators that allow programs to directly access very large files—up to 4000Mbs!—on disks created under other file systems, such as the High Sierra CD-ROM standard.

Many of the improvements in GS-OS are technical and esoteric. For example the "interleave" on formatted 3.5" disks has been souped up to 2:1. Roughly speaking, this means that the drive head can read a full track in only two revolutions, rather than four. When you format a disk ("initialize a volume") GS-OS now gives you a choice: new 800K at 2:1, "old" 800K at 4:1, or 400K—the old Macintosh single-sided format, which lets you get some use out of disks with one bad surface.

GS-OS smashes many of the limitations that fettered ProDOS 16. The number of online devices, open files and interrupt handlers is limited only by total memory size. One of the software engineers told me that they tried to test out how many little files could be open simultaneously. They gave up around 65,000.

With all of its new utilities, GS-OS takes up two 800K disks. The complete package, with manuals, will sell for $49, but customers who purchased a IIGS after August 15 can get it free. Apple's policy on updates is so wise and wonderful that I will quote the press release verbatim:

"Although many users will want the new manuals that come with the System Software package, Apple is also encouraging efforts to make the software available separately, free of charge from authorized Apple dealers, user groups and a variety of on-line services."

One sysop reported that Apple required him to sign an elaborate legal agreement before his on-line service was allowed to provide Apple system software for downloading. This included a promise not to use Apple system software for the manufacture of nuclear weapons. We can all sleep more soundly now...

AppleWorks GS

It appears that *AppleWorks GS* from Claris will be the first major commercial application to take advantage of GS-OS. The program was developed by StyleWare, the creators of *Multiscribe*, and Claris liked it so much they bought the company. Carrying a hefty $299 list price, this package integrates a word processor, database, spreadsheet, communications program and color graphics. The graphics can combine bit-mapped "paint" and structured "draw" functions on the same page! *AppleWorks GS* will require 1.25Mb of RAM, which should limit its penetration into the educational market (imagine trying to explain to a grumpy school board why you need another $500 per computer this year for extra memory). This is all the software that most home users will need, especially when the add-ons, desk accessories and enhancements start to appear.

In his keynote speech, John Sculley promised at least one more new Apple II within the next 18 months. This had better be the rumored IIGS Plus.

There will be low-cost upgrades (some time in the 4th quarter of '88) for owners of *AppleWorks* or *Multiscribe*. Contact Claris for details: (415) 962-8946.

With the arrival of GS-OS and *AppleWorks GS*, more and more IIGS owners will feel the need for a hard disk. For years, Apple II hard disks have been expensive, slow and plagued by a lack of standardization. As a result, less than 5% of Apple II owners made the leap into mass storage. At AppleFest there were signs of a thaw...with generally lower prices and some new ideas. But that's another story...

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computing since 1984. You can reach him on AppleLike (MOUSKOWITZ), The Source (SIG 060) or GEnie (M.MARKOWITZ2).

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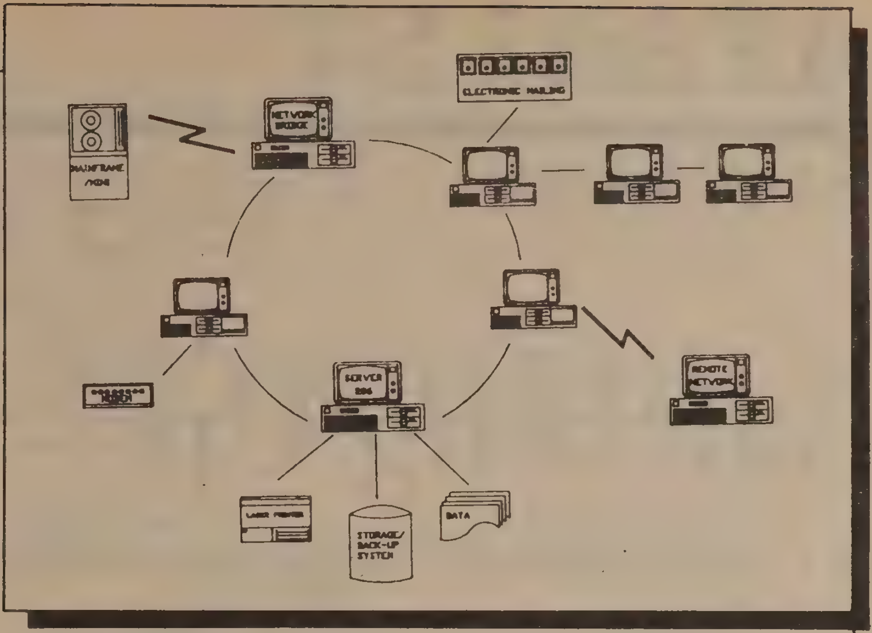

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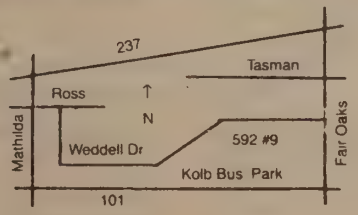

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ATARI ST

BY DAVID HAWKINS

Catching Up—

A Collection Of Announcements

Each month I intend to cover a lot of little announcements that have been accumulating around here. We'll see how well I do this time. First, I hope you have a Happy Holiday season. Maybe that means I should start with the good news...

MINIX Released

Many of the larger systems used in the computer field use an operating system called UNIX(tm), which was developed at Bell Labs in the early 1970s. UNIX is very powerful, but also expensive. I mean, who wants to spend over $10,000 to run UNIX on a computer that costs under $1000? (Well, *I* would if I had that kind of money, but I'm a nut, right?)

Well, now you can get a version of UNIX for under $100. Andy Tanenbaum in Holland wrote a program that looks like UNIX and called it MINIX. MINIX is being released in the U.S. by Prentice-Hall. It includes the source code along with a C compiler, which means you can modify it (if you know C). Some stores have it and some don't at the moment, so I haven't been able to get a copy yet. A full review will be along as soon as possible.

There is a book that describes MINIX, also. In the U.S. you can order the software and books from most bookstores or directly from Prentice-Hall in NJ. The ISBN number for the Atari software is 0-13-584392-8. Prentice-Hall's phone number is (201) 767-5937.

Spectre 128 Released

Dave Small's improved Macintosh emulator, Spectre 128, is now available. I still don't have a review copy (and will probably go ahead and buy one). It's $179.95 from Gadgets by Small, Inc. at 40 W. Littleton Blvd., #210-211, Littleton, Colorado 80120, and the phone number is (303) 791-6098; call between 8:30 am and 2:30 pm Mountain Time.

To use the Spectre 128 you need some Mac ROMs. If you use the old 64K Mac ROMs, you can run basically the same programs that the Magic Sac could run. If you get the 128K Mac ROMs, you can run just about everything, including *HyperCard*, Adobe *Illustrator* and *PageMaker*. There are stores advertising the 128K Mac ROMs, so evidently it's possible to get them.

WordUp Upgrade

WordUp, an excellent word processing program that I covered earlier this year, has now been upgraded. *WordUp* is from Neocept, Inc., 547 Constitution, Unit A, Camarillo, CA 93010. Some of the improvements include better printer support, clearer directions in the manual and an installation program that helps set up the necessary files.

Just Advice — Not News

I've been asked a few times what people with 520 STs should do with them. There's more and more software coming out that doesn't run well —or at all— on the 520.

Unfortunately everyone I've talked to has a different idea. I like the idea of getting a shop to extend the memory to 2 or 4 Megs. Memory chips are still expensive, but that's going to affect the price of a new system also. Check with a dealer about present prices on a Mega 2 or 4 and then see which looks better.

Personally I'm plugging along on a 1040 ST, but if I win the lottery, expect to see reports on the Mega 4 here. There are rumors that Atari will be announcing some new computers at COMDEX, but this column is being written before COMDEX.

Atari User Groups

I'll admit that I've never been to a Atari Users meeting. Where are they? If you know of a regular meeting, please write me c/o *MicroTimes*. I promise to get out and visit a few meetings in the near future.

Another Telecom Program

This month's column was written in the buffer of *Interlink ST*, a telecommunications program from Intersect Software, 3951 Sawyer Rd.; Suite 108, Sarasota, FL 33583. *Interlink* is a pretty good program, comparable to *Flash* in features and cost.

Interlink has a script or command feature that allows you to store a series of commands to be executed when you run that script. It also includes a feature that watches what you type in and stores it so you can run frequently-used command sequences as a script.

I prefer *Interlink*'s built-in word processor to *Flash*'s. *Interlink*'s doesn't display funny characters for carriage returns. It looks like straight text.

Basically I could live with either *Interlink* or *Flash*; both are good programs. For a new user I'd recommend *Interlink* because the manual is up to date. *Flash*'s is partly printed and partly on disk.

To use the Spectre 128 you need some Mac ROMs. If you get the 128K Mac ROMs, you can run just about everything, including HyperCard, Adobe Illustrator, and PageMaker.

Bad News

Neil Harris has left Atari as of September this year. He's now working for GEnie in Washington, DC. Normally I don't comment on what's going on inside Atari, but I will say that a lot of the people there are very dedicated and hard-working. I think it is a real loss for Atari that Neil and others have left. I've called Neil at the office at 10:30 on a Friday night to check the facts in my next column, and he was not only there but willing to carefully go over what he knew about the material.

Good luck in the new job, Neil.

Bad Product

There's another game out there to avoid: *Lords of Conquest*. The game is similar to the board game of *Risk* in that you and the opponent have all the countries on the map and each tries to get control of every country. It's like the computer game of *Empire* in that you control resources and production.

Lords of Conquest has several problems, though. First, the manual is poorly written. There are some important details of the game that are inadequately described. The graphics in the game are terrible. The logic is also hard to follow. I played the game for about six hours, never did get certain parts to work, and couldn't tell if it was poor game design or poor writing in the manual. ☐

Copyright © 1988 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco goth monitors, an Okimate 20 color printer, and disks all over the room.*

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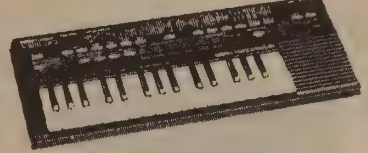

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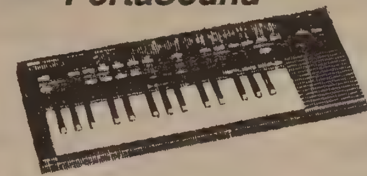

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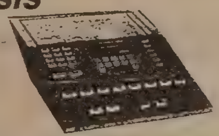

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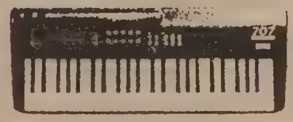

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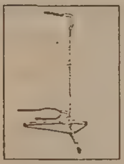

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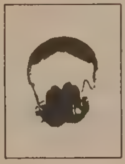

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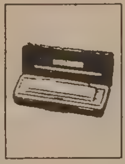

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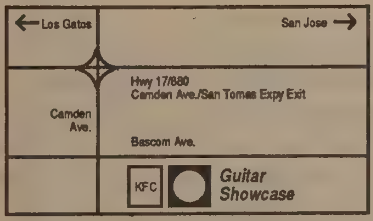

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BY MATTHEW LEEDS

Holiday Ideas For Your Amiga Friends

The end of the year is rapidly approaching and with it come holidays with a tradition of gift giving. Which means that it's time for me to write about what to get for an Amiga owner. A computer without software, after all, is like a toaster without bread. And so it's time for the annual spend-it-all follies.

For The One Who Has Everything...

Looking for that special gift for the person who has everything? Want to make sure that your special Amiga friend is the envy of the neighborhood?

Get them a 68030 board with lots of 32 bit memory. This high-priced combination is the equivalent of a four barrel carburetor and 4:11 rear end. Your friend will be able to watch 3D animations render in days instead of months, and recalculate spreadsheets in the blink of an eye. You, of course, will be contributing to the national debt, but that's another column. Recommended is the Hurricane board from Finally Technologies.

For The Budget-Minded

On a more affordable level, the basic gifts to look for are the essential software items: a good paint program, word processor, disk utility, subscription to an Amiga-specific magazine and a copy of the official release of AmigaDOS 1.3.

The leader in paint programs is still *Deluxe Paint II*. It has its limits (no support for EHB or HAM, dumb file requesters and font requesters) but it is the workhorse of paint programs for all Amiga users. It is the easiest to learn, offers the best balance between number of features and ease of use, and just might one day be upgraded again. Alternative choices include *Digi-Paint*, an excellent HAM paint program; *Express Paint* 2.0, a little harder to use than *Deluxe Paint* but with some impressive new features; and *Deluxe PhotoLab*, a newcomer with some image processing capabilities and an excellent poster printing module.

As to word processors, it's a tough category to pick a winner in. I personally prefer a non-graphics based word processor, as I rarely need to submit hard copy and I don't like the performance penalty imposed by graphics-based programs. I still use *Scribble!* for much of my work—I like its speed and multiple windows, and I've just gotten used to using it. When I need a more powerful program I switch over to *WordPerfect*. It requires a hard disk for tolerable performance, but it offers some impressive extras.

If you are interested in a graphics-based word processor (these offer multiple fonts, graphics and some color), I would recommend either *ProWrite* or *excellence! ProWrite* is more affordable, runs a little faster on-screen and is easy to learn. *excellence!* is expensive but offers considerably more power. It too runs best in a hard disk environment and prefers lots of expansion memory.

Shuffling files around from Workbench or CLI sometimes becomes awkward. Some files don't have .info files attached to them, making them invisible in a Workbench environment. Finding out how much space a set of files will take up or remembering the correct set of DOS commands to create a subdirectory and fill it with the right files can be too much sometimes at 3 A.M. That's when a good disk utility can come in handy. There are quite a few good ones in the public domain, but somehow they wouldn't seem appropriate as a gift. And none of them seem to have all of the features found in *DiskMaster* from PP&S. This is the disk utility I use every day. It even plays digitized sound samples.

There are a lot of magazines available for Amiga owners. To decide which one would be best for a friend, you'll need to decide where their interests lie. If they want general information on new products for the Amiga, *AmigaWorld* would be a good choice. If they want more in-depth looks at using the Amiga and programming, then *AmigaTimes* might be a good choice.

For pure product reviews on the newest products *Amiga Sentry* seems to have the best coverage. Don't overlook the disk-based magazines; both *Jumpdisk* and *AMNEWS* offer a good mix of coverage.

The latest release of AmigaDOS has finally hit the street. Long overdue, but well worth the wait, 1.3 adds lots of new features and some powerful new commands. The official release package includes an excellent manual.

If you should, for some reason, decide not to get it, I would still recommend a book that can guide your friend through the intricacy of AmigaDOS. *The Amiga Companion*, by Rob Peck, is the first book out that includes AmigaDOS 1.3. It offers both general information about the Amiga, and specifics on using the commands. Although it has a few missing pieces of information, it is a good general guide to using the Amiga.

> **The basic gifts to look for are the essential software items: a good paint program, word processor, disk utility, subscription to an Amiga-specific magazine, and a copy of the official release of AmigaDOS 1.3.**

If your friend does not have a hard disk, I would recommend *FACC II*, the floppy accelerator. This is a floppy cache program that stores the most recently used information from a floppy drive in memory. The next time that information is requested (i.e., calling a directory) it comes from RAM instead of off the disk. Although it works best with expansion RAM, the size of the cache can be specified to allow it to work on an unexpanded Amiga.

If you've recently won the lottery, some good $500 to $800 dollar choices include expansion RAM, a hard disk system, FlickerFixer (for A2000 owners), genlock/encoder and a good chair to sit in while using the computer. The chair might come in at a little less.

For video fans, *Videoscape* and *Sculpt-Animate* offer real 3D rendering and animation. They both require dedication to learn and patience during rendering. For special effects and titling I like *Video Effects 3D*, easy to learn but full of possibilities. A good image processing program such as *Butcher* or *Pixmate* would also come in handy.

Finally, don't forget games. I'm not a great fan of computer games, mostly because I sit in front of one too many hours each day as it is, but there are a few well worth the time. *Interceptor* is an excellent flight simulator, fast, noisy and full of flash. *Shanghai* is a solitare based on mah-jongg, addictive and absorbing. For those who haven't seen it yet, *Marble Madness* is still enjoyable. *Balance of Power* still rates as the strategy game for geopoliticos, offering real depth but requiring a real time commitment to play. ☐

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields.

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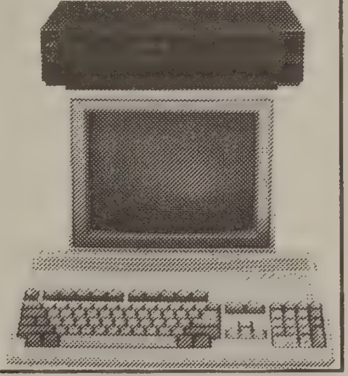

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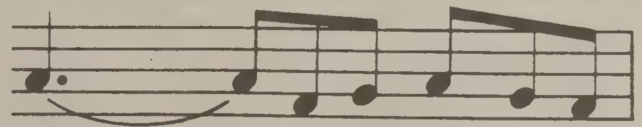

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USER GROUP NETWORK

BY MARY EISENHART

This month seems to be an unusually active one in the Bay Area, with abundant events and meetings for computer users of most varieties and lots of new groups checking in.

To deal with some of the more noteworthy events coming up, we'll start with **Computer Professionals for Social Responsibility**, who are holding their annual meeting November 19-20 in Cubberley Auditorium on the Stanford University campus. **Jim Warren**, whom readers will recall not only for his "Realizable Fantasies" column in *MicroTimes* but also for some of his other creations, notably the Computer Faire and *Infoworld*, will be delivering the keynote address at the banquet, and the gathering itself will offer various panels on currently hot issues. "Privacy, Computers and the Law" will discuss the FBI's plans for further incursions into the lives of individuals; speakers include San Jose **Congressman Don Edwards**, chairman of the House Subcommittee on Civil and Constitutional Rights, **Jerry Berman**, chief legislative counsel for the ACLU and director of its Privacy and Technology Project, and **Peter Neumann** of SRI International. Another panel, consisting of Apple's vice president of Advanced Technology **Larry Tesler**, Release 1.0's **Esther Dyson**, **Fernando Flores**, co-author of *Understanding Computers and Cognition*, **Peter Lyman**, USC's director of educational computing, and sociologist **Theodore Roszak**, author of *The Cult of Information*, will discuss Apple's Knowledge Navigator and its impact on learning. Other sessions include "Technology, Work and Authority in the Information Age" and "Women and Computers: Does Gender Matter?"

This information comes to us via **John (tex) Coate of The WELL**, and if you'd like more information call (415)322-3778.

The **Apple Core and Bay Area MacForum** will be hosting their annual **Apple II/Macintosh Swap Meet** on Sunday, November 20, from 1:30 to 4:30 pm. According to **Angela Allberry**, who sends us this news, there will be many booths with a large selection of consignment items, demonstrations, games and more. So if you've got something to sell ("Very inexpensive consignment rates," says Angela, noting that you need not be a member to participate), or just want more information about the event, call (415)771-5830.

Meanwhile, the **Silicon Valley Computer Society** continues to send word about its still-proliferating Special Interest Groups and their various doings. Highlights this month include a meeting of the **Artificial Intelligence SIG** at Hewlett-Packard, 19447 Pruneridge Avenue in Cupertino. **John Walters**, the director of Expertise Center, and **Sandy Mingia**, Western Area AI Marketing Manager for Digital Equipment Corporation, will discuss "Artificial Intelligence in Manufacturing." Call **Rita Zokaei** at (415)574-8225 for more info.

Apparently Microsoft is making good use of the time it's saved by not doing any NeXT software—not one but two local groups report impending visits of marketroids from the Northwest. November 9 finds Microsoft at the newly-formed **Microsoft Word SIG** of the **Diablo Valley PC Users Group** in Walnut Creek, and on November 28, *Word*'s product manager, **Ruth Karman**, will discuss the product's new versions and give away cool door prizes. Call **Bill West** at (408)356-8805 for information.

Apparently Microsoft is seriously cultivating ties with user groups. According to the press release from DVPC, "Microsoft is making a major commitment to support its products through users groups. DVPC has formed a Special Interest Group in conjunction with Microsoft Corporation to provide the very best possible support to DVPC members who own Microsoft *Word*. The DVPC Microsoft *Word* SIG enjoys unprecedented support, including updates to printer drivers and direct access to Microsoft for any assistance needed by DVPC *Word* users. In addition, our *Word* SIG leader has received hands-on training in *Word* at Microsoft." So if you'd like more information, or if you want to do something similar in your own user group, call the DVPC club hotline at (415)943-1367.

Michael Wright of **GMUG**, **San Francisco's Macintosh Users Group for Gays and Lesbians**, reports that the group will be holding its monthly main meeting in the UC Extension Annex at 1930 Market Street, Room 2G, on Wednesday, November 16 at 7 pm. The group also has SIGs for desktop publishing and *HyperCard*, and if you'd like more information, you're invited to call (415)641-GMUG.

The **Prolog Forum Users Group** continues to delight Prolog fans with the presentations at its monthly meetings. The meeting on Monday, November 14 will feature a demo by Applied Logic Systems of its new Prolog 2.0 for the Macintosh. This meeting will be held at 1301 Shoreway Road in Belmont, in the conference room. The December meeting will find Texas Instruments (or a representative thereof) presenting Prolog on the Micro Explorer II. This presentation takes place at Texas Instruments, 5353 Betsy Ross Drive, Santa Clara. Both meetings are at 7:30 pm, and **Mark and Jacqueline Epperson** are the people to call if you'd like to learn more about the group: (415)657-4075.

Steven List, chair of the **Unify Users Group of Northern California**, sends us email (via a circuitous uucp path) to tell us about his group, which offers information exchange, presentations and problem-solving to users of Unify Corporation's products. Email distribution is available to those on usenet or uucp at **UUG-dist@mrspoc**. Information about the group is available if you send email to **UUG-request@mrspoc** or use your voice phone to call Steven at (415)961-6112.

Finally, if you're South America-bound, this message from **Fabian A. Rodriguez**, president of **CoCoByte, El Grupo de Usuarios del Color Computer**, might be of interest. CoCoByte is in Cali, Colombia, and supports the Tandy Color Computer 1, 2 and 3. It offers software in French, Spanish and English and would probably welcome correspondence from other Tandy users. You can write to CoCoByte c/o Fabian Rodriguez, A.A. 5976, Cali, Colombia, South America. And tell him hello from us!

That's about it for now; keep that information flowing in our direction. As always, you can send US Mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, and email to **microx** on The WELL, (415)332-6106 or via usenet to **{pacbell, hplabs, ucbvax, apple]!well!microx**. Also, feel free to fax us your listing at (415)652-4618. Thanks!

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203

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209

Bertha Board BBS.(209), 239-9853, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 95 Mb online. Emphasis on programming. Uploads and downloads. No fee but registration required. Sysop: Kenneth Roach.

Oasis Software Library.(209), 823-2803, 300/1200/2400, 8-N-1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

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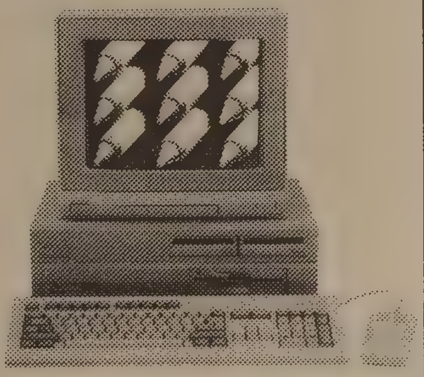

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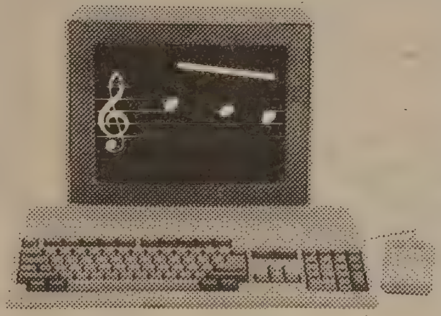

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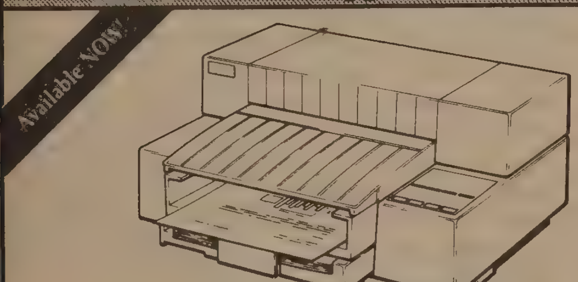
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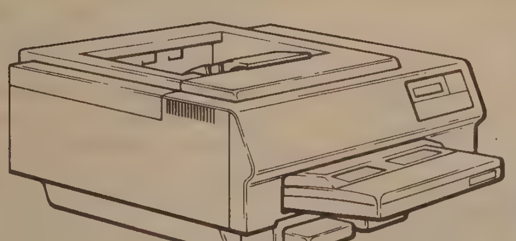

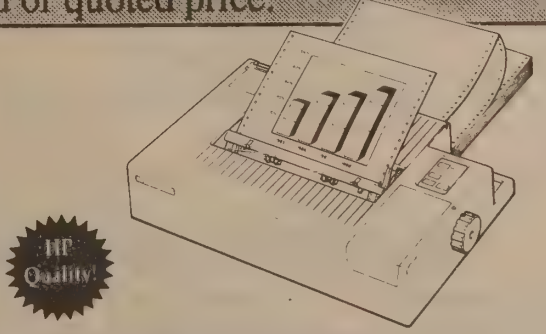

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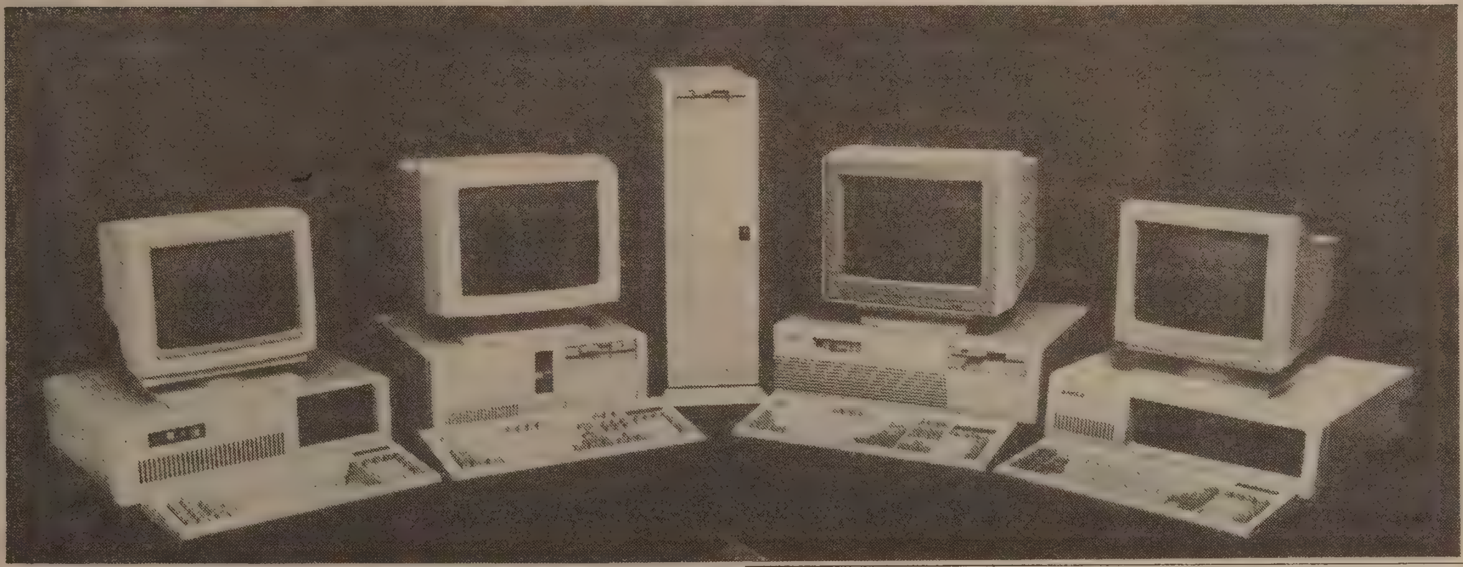

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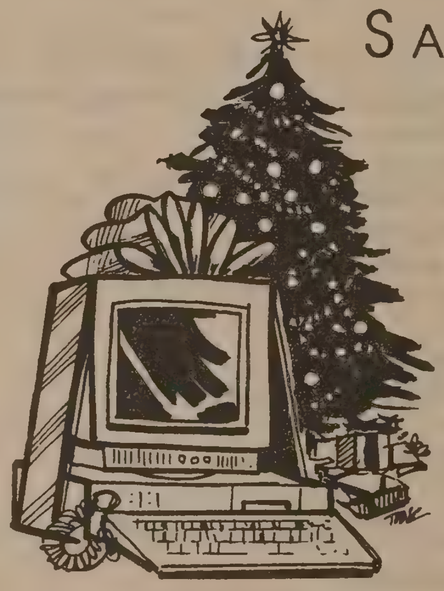

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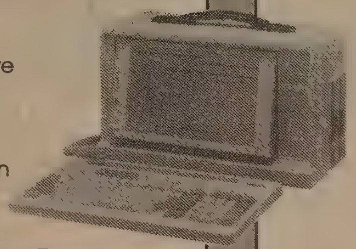

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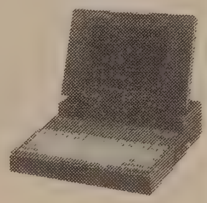

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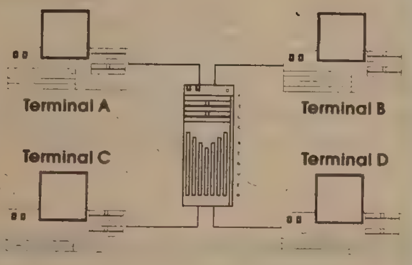

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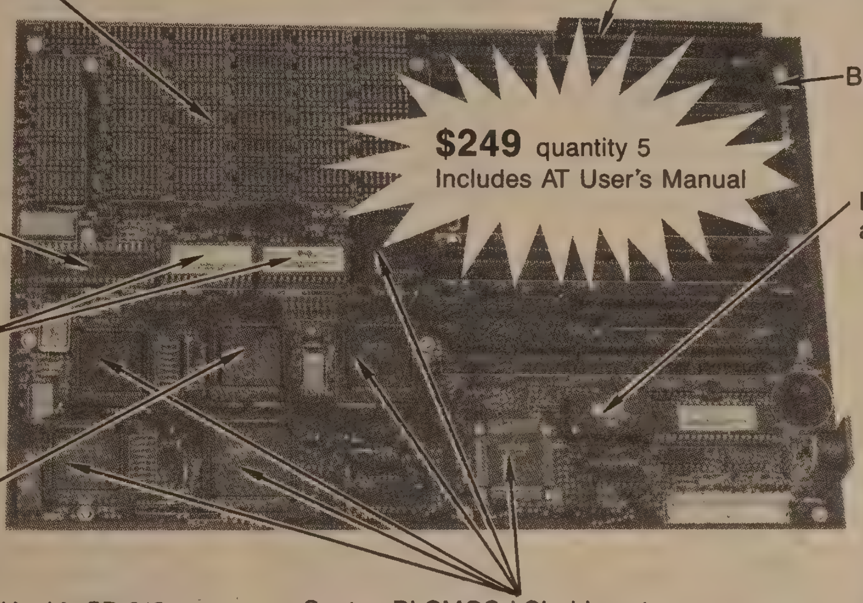
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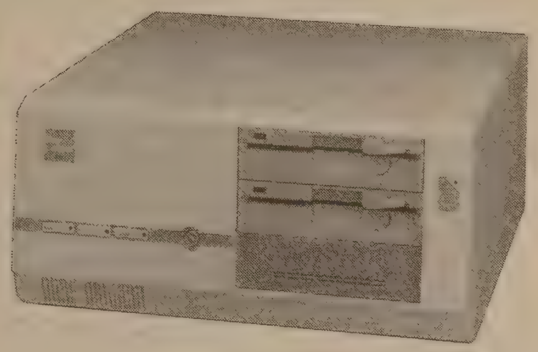

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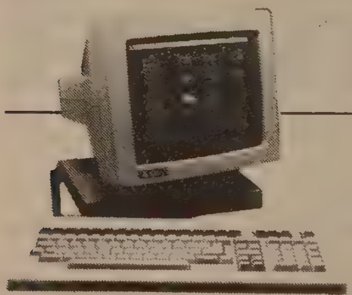

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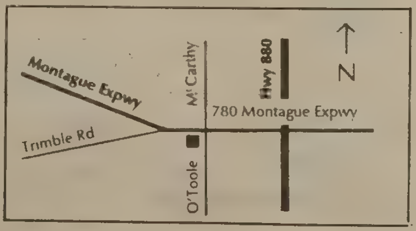

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ANImated People User's Group In the spirit of Max Headroom and "Hitchhiker's Guide," we're attempting computer digitization/animation of real-people personalities. San Jose. Call: Tom, (408) 226-9225.

Artificial Intellegence Special Interest Group. Meetings: 2nd Thurs. Engineering 101,Santa Clara University. Independent nationally recognized group studying and developing AI and artificial neural networks. Call Kent Byron (408) 244-8739 for info.

Artificial Intelligence Special Interest Group (AISIG). Call Rita Zokaei, (415) 574-8225.

Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 PM, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

BAY HPX. Meetings: 2nd Saturday Laptop & handhelds. Call Jim Horn or Michael Felsenstein: (707) 794-3130/(415) 564-8279.

Bay Area CYMA Dealers Association. Meetings: 2nd Tuesdays, Thursdays; 4:30-6:30 pm, San Mateo. Networking and support for McGraw-Hill accounting software consultants and retailers. Call: (415) 345-5955.

Bay Area Desktop Publishing User's Group. Meetings: Tues. 6-8 PM Norman's Restaurant, 3204 College Ave., Berkeley (Corner of College and Alcatraz. For more info call Dr. C.J. Wallia at (415) 848-8200.

Baytalk Computer Users Group. Write: PO 369, Berkeley 94701. BBS: (415) 864-6430, 300/1200, 8-N-1.

Business Computerization User Group. Group forming. Write 6938 Buckingham Blvd., Berkeley, CA 94705, or call (415) 848-2080.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

COBOL And SQL Users Club Call: Dr. Badshah K. Mian, (415) 337-1787.

Computer Associates Users Group Meetings: 3rd Wednesdays. Gateway Holiday Inn, San Francisco. Call: J.C. Lukrich & Co, (415) 864-6770.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

CYMA/McGraw-Hill Users Group Meeting. Meetings: Monday, October 24, 3:00-5:00 pm, McGraw-Hill Publications Building, 425 Battery St., San Francisco. Meet CYMA professionals and learn how to get the most from your software. Call: (415) 839-7466.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408) 993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415) 339-3895

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs., 7:30 PM, 200 Seventh Ave., Suite 225, Santa Cruz, CA 95062. Contact Robert at (408) 476-8464.

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707) 546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meet-

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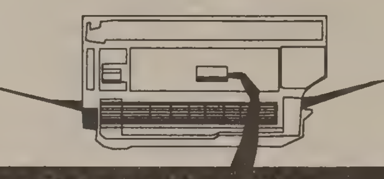

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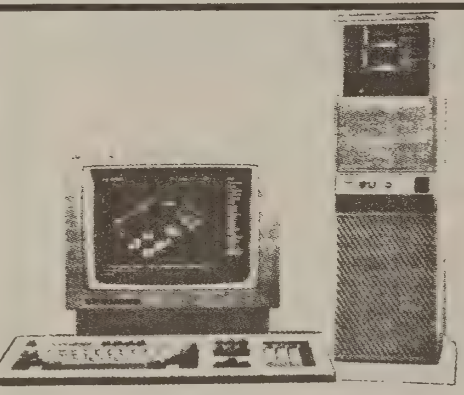

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Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415) 655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing.Determine market opportunities, group research projects. (415) 564-6669.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 PM Berkeley or Peninsula. For location and date, call Thomas Ross, (415) 845-2410.

PASS: Professional Association of Secratarial Services.Meetings: 2nd Saturdays,Scott's Seafood, Jack London Square, Oakland.Call: Nin Feldman,(415)655-4296.

PC Publishers Of Northern California. Meetings: 2nd Thursdays, 7 PM, 1415 Valencia St., San Francisco Newsletter, telephone hotline, reference library, education. Support Ventura, PC PageMaker, etc. Intro membership: $15/yr. Call (415) 661-9270.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 PM, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

ProTel (Professionals In Telecommunications) Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications.Leave a message at (415) 227-5637 for information.

SEF Marketing SIG. Meetings: Oct. 27—Telemarketing; Nov. 29—Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (415) 8328-0356

SEF OOP SIG. Meeting: Third Tues. 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415) 859-1043.

SF Robotics Society. Meetings: 2nd Mon. Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

Silicon Valley Computer Society. Contact Kent Stafford (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Silicon Valley Techno—Musicians Network. Computers, MIDI, electronic/computer music, home studios, all experience levels, all computers, all musical styles welcome. Call: Bob, (408) 733-3429.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415) 854-7219.

Technology Executive Roundtable (TER) Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara.Call: Jenny Hoyt,(408)997-1826.

The Society For Technical Communication. Meetings: 1st Wed. 7:00 PM Room #3, SMUD Facilities, corner of Elkhorn and Don Julio, Sacramento. Devoted to the advancement of the theory and practice of technical communication.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707) 996-7922.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415) 574-8225

USER GROUPS

AMIGA

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO 4669, Walnut Creek, CA 94596. Call: 689-3453

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues. 7 to 9 PM 11185 San Pablo Ave., in El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodre Users Group. Meetings: Third Thursdays, 7:00 PM, Embarcadero YMCA, between Mission & Howard. Support C-64/128 and Amiga. New Users welcome. Write PO 146731, San Francisco, CA 94114-6731.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues. at 7 PM, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012 for call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 PM. The Computer Room, Kings Village, Scotts Valley.

Vallejo AMiga People (VAMP). Meetings: 2nd Tues. 6:30 PM Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APL

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 PM, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call-A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206) 251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401,San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

GravenStein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 AM, Coddingtown Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 3rd Saturdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Tri Valley Apple II Users Group. Meetings: 1st Thurs. 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

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GAMES

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- ☐ **GLOBAL THERMAL NUCLEAR WAR (105)** Frightening possibilities.
- ☐ **ARCADE GAMES (106)** Has Kong, 3-D Pacman, Bricks, Pango. (Requires color.)
- ☐ **BASIC GAMES (107)** Pacman, Lunar Lander, Startrek, Meteor, Breakout, and others.
- ☐ **CARD GAMES (109)** Canasta, hearts, draw poker & bridge.
- ☐ **STRIKER (110)** Defender-like game. "Top Gun" in space.
- ☐ **FLIGHTMARE (112)** Futuristic fighter pilot game. (Requires color graphics adapter.)
- ☐ **SLEUTH (117)** Who done it?
- ☐ **MONOPOLY WITH GRAPHICS (118)** Color or monochrome.
- ☐ **DND (119)** Like Dungeon and Dragons.
- ☐ **GAMES IN BASIC (124)** Lander, biorhythms, desert, Phoenix, Star Wars, others.
- ☐ **TRIVIA GAME (130-131)** (Two disks) Extensive trivia game.
- ☐ **PROFESSIONAL BLACKJACK (148)** Become a pro.
- ☐ **QUEST (152)** Role playing adventure fantasy game. (Requires color.)
- ☐ **PINBALL (153)** Many games. Also includes a great maze game.
- ☐ **BRIDGE PAL (171)** Complete game of contract bridge, with tutorial.
- ☐ **FENIX (193)** Just like the famous arcade game.
- ☐ **SPANISH HANGMAN (196)** Fun way to learn Spanish.
- ☐ **KID-GAMES (GAM8)** Animals math, clock game, alphabet, etc.
- ☐ **CHESS (GAM9)** Incredible. 2D and 3D. Many levels. Play back moves, store games.
- ☐ **WIZARD'S LAIR (GAM14, GAM15)** (2 disks) Like Dungeons & Dragons, w/maps, sorcery, etc.

EDUCATION

- ☐ **FUNNELS AND BUCKETS (201)** A fun way to learn basic math.
- ☐ **MATHPAK (202)** Tutorial with lessons in higher mathematics.
- ☐ **PC-TOUCH (204)** Typing tutorial.
- ☐ **EZ-SPELL (206)** Checks spelling.
- ☐ **EDUCATIONAL PROGRAMS (207)** Preschool and elementary.
- ☐ **BASIC TUTORIAL (208)** Learn programming with BASIC.
- ☐ **BEGINNING SPANISH (211)** Tutorial.
- ☐ **BIBLEQ (214)** The Bible with this question-answer tutorial.
- ☐ **SPANISH II (232)** Sequel to #211.

MUSIC

- ☐ **PIANOMAN 3.2 (301)** Turn your keyboard into a piano. Fun!
- ☐ **PC-MUSICIAN (302)** Compose, save, and play music.
- ☐ **CHRISTMAS SONGS (311)** Play your favorites on your PC.

WORD PROCESSING

- ☐ **PC-WRITE 2.71 (401-402)** (2 disks) Latest version of this popular program w/spelling checker.
- ☐ **NEW YORK WORD (403-404)** (2 disks) Powerful split screen editing, mail merge, etc.
- ☐ **LETTER WRITER (405)** The easy way to write letters! Popular.
- ☐ **PC-STYLE (413)** Analyzes style and readability of your writing. Works with Wordstar, PC-Type & ASCII.
- ☐ **PC-TYPE+ (421-423)** (3 disks) Excellent. Includes mail merge, 100,000 word spelling checker. Interfaces with PC-File +, PC-Style.

SPREADSHEETS

- ☐ **EZ-SPREADSHEET (509)** Easy but powerful. Beginner and pro.
- ☐ **PC-CALC+ (512-514)** (3 disks) Jim Button's famous Lotus clone.

SPREADSHEET TEMPLATES

- ☐ **LOTUS MACROS (601)** Save hours of work. (Requires Lotus 1-2-3)
- ☐ **LOTUS SPREADSHEET TEMPLATES (602)** Ready-made. (Requires Lotus 1-2-3)
- ☐ **LOTUS TUTORIAL (630)** Great for learning Lotus (requires Lotus).

ACCOUNTING AND FINANCE

- ☐ **PC-GENERAL LEDGER (701)** Popular accounting system. Easy!
- ☐ **MR. BILL (702-703)** (2 disks) For billing customers; invoices, client reports, audit trail.
- ☐ **CPA LEDGER (706-708)** (3 disks) Complete GL.
- ☐ **PC-STOCK (712)** Analyze market trends. Includes graphics.
- ☐ **PC-PAYROLL (714)** Menu driven payroll system.
- ☐ **PERSONAL FINANCE MANAGER (715)** Household budget manager. Keep track of checking, savings, investments.
- ☐ **CHECKBOOK (752)** Complete system with online help.
- ☐ **FINANCE MANAGER II (774-775)** (2 disks) For personal or small business financial management.

DATABASE PROGRAMS

- ☐ **PC-FILE + 2.0 (801, 805, 837)** (3 disks) Rated better than dBase III+ by Consumer Reports.
- ☐ **PC-GRAPH (802)** Creates graphics directly from PCFILE.
- ☐ **FILE EXPRESS 4.0 (803-804)** Powerful system. Allows 32,000 records. Sorts up to 10 key fields.
- ☐ **DBASE III ROUTINES (815)** Over 60 helpful dBase III routines.
- ☐ **WAMPUM (824, 825, 835)** (3 disks) dBase III clone. dBase III compatible.

GRAPHICS

- ☐ **KEYDRAW CAD SYSTEM (1001, 1002, 1065)** (3 disks) Popular. Also uses mouse. (Requires color graphics - CGA.)
- ☐ **3-D (1003)** Create and edit 3-D objects. (Requires color graphics.)
- ☐ **ANIMATOR (1011)** Create animated pictures on your PC.
- ☐ **SIMCGA (1027)** Use with Hercules graphics card/compatibles to run programs requiring CGA.
- ☐ **READ MAC (1041)** Digitized pictures of Ashley, Cheryl, Brooke and Spock. ADULTS ONLY!
- ☐ **FINGERPAINT (1050)** Use keyboard or mouse to draw. Like MacPaint. (Requires CGA or EGA.)
- ☐ **DANCAD 3-D (1051, 1052)** (2 disks) Create 3-D graphics. Rotate, magnify, etc. Runs on CGA, EGA, or Hercules/compatibles.

TELECOMMUNICATIONS

- ☐ **Q-MODEM 3.1 (1101, 1102, 1144)** (3 disks) Powerful but easy to use. Fast.
- ☐ **RBBS-PC (1107-1109)** (3 disks) Multi-user BBS.
- ☐ **PROCOMM 2.42 (1112-1113)** (2 disks) Hacker's delight. Redial capability. Latest version.

SECURITY/HACKING

- ☐ **UNPROTECT PROTECTED PROGRAMS (1202)** Make backups of protected software.
- ☐ **UNPROTECT II (1203-1204)** (two disks) More ways to backup commercial software.
- ☐ **UNPROTECT III (1205)** Unprotect Softguard protection.
- ☐ **UNPROTECT IV (1206)** More programs you can unprotect.

DOS

- ☐ **DOS TUTORIAL (1301)** Teaches you to use DOS.
- ☐ **DOS HELP (1302)** Convenient help when a problem arises.
- ☐ **STILL RIVER SHELL (1304)** Run DOS commands from a menu. Makes using DOS easy.
- ☐ **BATCH FILE TUTORIAL (1305)** Utilize batch file processing.
- ☐ **DOS TIPS (1311, 1314)** (2 disks) Advanced tutorial.

BASIC

- ☐ **PC-PROFESSOR (1401)** BASIC tutor.
- ☐ **BASIC PROGRAM GENERATOR (1402)** The menu driven way to write programs.
- ☐ **SWISS ARMY KNIFE (1406)** Tools for programming in BASIC.

APPLICATIONS

- ☐ **FORM LETTERS (1907)** Commonly used form letters and business applications.
- ☐ **EZ-FORMS (1908)** Make forms to meet different needs.
- ☐ **MAIL MASTER (1910)** Create mailing lists. Print letters and labels.
- ☐ **ASTROLOGY 9.4 (1916)** Calculate your own chart. Prints wheel.
- ☐ **HOME INVENTORY (1966)** Track all your possessions.
- ☐ **LOTTO MASTER (1981)** Play the lotteries w/scientific methods.
- ☐ **MEMBERSHIP SYSTEM (1984)** Great for clubs, churches, etc.
- ☐ **FAMILY HISTORY (2203-2204)** (2 disks) Create files and genealogical reports.
- ☐ **DR DATA LABEL (2327)** Powerful mailing list program. Customize labels to size and format.
- ☐ **CITY DESK (2513)** Simple desktop publisher.

UTILITIES

- ☐ **DESK COMMANDO (2607)** Better than Sidekick. Many features.
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RELIGION

- ☐ **THE BIBLE (3301-3306)** (6 disks) Old Testament, King James version.
- ☐ **THE BIBLE (3307-3308)** (2 disks) New Testament, King James.
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(BAAUG). Meetings: 1st Mon. 7:00 PM Bracher School, corner of Bowers and Chromite, Santa Clara. ST users meet at Bracher on 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

AT&T

Bay Area AT&T PC Users Group - South Bay. Meetings: 2nd Wed. 6:30 PM AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

Bay Area AT&T PC Users Group. Meetings: 1st Wed. 6:30 PM Alternates between Oak. & SF, Call: Joe Mahoney (415) 586-8376. BBS: (415) 829-6027.

AUTOCAD

San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. $20 annual membership fee & newsletter. For further info, call Volker, 331-9466, or Virginia 777-4025.

Sonoma County AutoCAD Users Group. Call (415) 777-9144 for info.

COMMODORE

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues. BBS (408) 946-6154.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714) 531-2977 for info.

Commodore Connection Users Group. BBS (415) 458-1005.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat.BBS (408) 946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Embarcadero YMCA, between Mission and Howard. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 2nd Thurs. 7:30 1331 Concord Ave. For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributer.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon. Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 PM, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat. BBS (408) 946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun. BBS (408) 946-6154.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. BBS's: (415) 352-5528 & 782-4402.

Silicon Valley Commodore Club. Meetings: 4th Wed. 7 PM Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

dBASE

dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

DATAEASE

Bay Area DataEase Users Group. Meetings alternate between San Francisco and Palo Alto. Contact Kermit Carter at (415) 945-7817 for info.

DYNABYTE

Dynabyte - Tahoe City Dynabyte Users Group. Swap, buy/sell - boards, parts, units. Write to Drawer 2629, Olympic Valley, CA 95730 for info.

EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat. 9:30-12 noon Tandem Computer H.R. Training Rm., N. Tantau Ave., Cupertino.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt Oakland. Call Debbie at Pansophic, (415) 573-7100. All users welcome.

EPSON

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs. 7-10 PM Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

FIRST PUBLISHER

First Publisher User Group. Members make up 8 1/2 x11 formats for newsletters & tip sheets. $35 annual membership. Contact Raul Ibanez (415) 550-0785.

FORTH

Forth Interest Group of Silicon Valley. Meetings: 4th Sat. 1 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call George Shaw at (415) 276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat. 1 to 5 PM South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

FOXBASE+

FoxBase+ User Group. PO 20607 Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415) 465-3570.

GAVILAN

Gavilan User Group. Meetings: 2nd Thurs. 7 PM Lockheed Bldg. 162. Cal (408) 379-2774 for info.

HYPERCARD

HyperCard SIG/GMUG. Meetings: 2nd Wednesdays, 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG.

HyperCard SIG/SEF. Foothill College. Call for dates and time: David Gewirtz, 345-4620.

IBM AND COMPATIBLES

A New PC-CLONE CLUB. Meetings: 1st permanent meeting Oct. 7, 8 pm, Cal State Hayward, Rm. 2078, Meiklejohn Hall. Members with experience and large Public iibrary. Call: (415) 538-2449.

Accounting SIG/SFPCUG. Meetings: 4th Mondays, 7 pm. 179 Parnassus Ave., San Francisco. Call: G. Watson, (415) 398-3587.

AI - Expert Systems for Business (ESB). Investigate real business Expert System solutions for PC's. Guest speakers, discussions. Newsletter. $18/yr, $26/yr bus. Call 564-6669 for info.

Beginners SIG/SFPCUG. Meetings:3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: (415) 211-9166.

C Language SIG/SFPCUG. Meetings: 2nd. Mondays, 7 pm, Kam's Rest., 2068 Center St., Berkeley. Call: Dan Baumbach, (415) 457-0729.

Clipper SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, Rm. 1, Bldg. A, Fort Mason Center, SF. Call: Michael Palladino, (415) 751-2719.

Columbia SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Dennis Tye. (415) 566-0587.

CUE Club. MS-DOS machines. SIGs for other computers. BBS:(209) 239-9853. For more info call (209) 858-4401.

DataPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Christy Quinn (415) 644-1855.

dBase SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 No. San Pedro Rd., San Rafael. Call: John Stephenson, (415) 488-0342.

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415) 566-3648.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415) 272-9099 for more info.

Enable SIG/SFPCUG. Meetings: 2nd Wednesdays, 7:30 pm, Walnut Creek. Call: Sandi Baker, (415) 946-1716.

Financial SW SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Rm. 1, Bldg. A, Fort Mason Center, SF. Call: Nick Maffei, (415) 668-2456.

FUNHUG—PC. Meetings: 3rd Wednesdays, 7:30 pm, Fremont Library, 39770 Paseo Padre Parkway, Fremont, in the Meeting Room. Mainly just the MS and PC DOS world. Send SASE to Russ Fischer, 2792 Arlington Place, Fremont 94555.

IBM & Compatibles Users Group (ICUG). Meetings: A mail-based user group with possible meetings. Not for PCjrs. $8/yr. Write: Dan Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

IBM Compatible Users Group. Meetings: monthly, call (415) 969-6916 for info 7-10 PM.

IBM Technical SIG/SEF. Teknowledge. Call for dates and time. Call: Mike Schmit, 244-6826.

Kay+Fun Peninsula Computer Club. Meetings: 2nd Thursdays, 7:30 PM. Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415) 572-8219.wCall: 593-9981.

Lotus SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Jerry Stern, (415) 282-4100.

Marin-Sonoma PC Users Group (MSPCUG). Meetings: Last Tuesdays, Tamalpais Ave. & 3rd Ave., San Rafael Whistlestop Bldg. Call: (415) HAWK.

Mid-Peninsula IBM-Club. For IBM employees only. Call Scott Maiden for info: (415) 855-4509.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, Call: Richard Lesnick, (415) 398-3587.

NewViews SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, 179 Parnassus Ave., SF. Call: G. Watson, (415) 398-3587.

OtherPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Quisty Quinn, (415) 644-1855.

Paradox SIG/SFPCUG. Meetings: 4th Wednesdays. Call: Allen Greenkey. (415) 621-8478.

PC UNIX SIG. Meetings: 1st Wednesdays, 7 pm, AT&T Training Center, 1090 E. Duane Ave., Sunnyvale. Learn more about such UNIX versions as Microport, XENIX and Minix. Starting a library of public domain source code. Call: Dan Kionka, (408) 432-1300.

Sacramento PC User Group. Meetings: For information call Jackie Janssen at (916) 383-6900.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

San Francisco PC Users Group. Meetings: 3rd Mondays, 8 pm, Rm. 1, Bldg. A, Fort Mason Center, SF. Call: (415) 221-9166. BBS: (415) 621-2609.

San Francisco PCjr Users Group (SFPCjrUG). Meetings: First Sundays. 7:30 PM, Homestead Savings, 22nd Ave./Geary, San Francisco. Demonstrations and discussions, club library, disks for sale. Call: John King, 472-7035

Santa Cruz Computer Society. Meetings: 3rd Thursdays. 7 PM, Santa Cruz County Office of Education, 809 Bay Avenue, Suite H, Capitola. Call: 479-1180.

Silicon Valley Computer Society. Meetings: 4th Wed. 7:30 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call Kent Stafford for info at (408) 286-2969.

Silicon Valley FOG. Meetings: 3rd. Wed. 7:30 PM Saratoga Community Library, 13650 Saratoga Ave.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 PM, Fairfield High School.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 PM, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415) 659-1515.

South Bay AT&T PC UG. Meetings: Call for info. Call (408) 226-0116

South Bay WordPerfect User Group. Meetings: Monthly, 13650 Saratoga Ave., Saratoga. Call: Martin Van Derpool, (408) 238-8434.

South County PC Users Group. Meetings: Round Table Pizza Restaurant, 22457 Foothill Blvd., Hayward. Call: R.A.McCloud, (415) 537-9899.

Teachers SIG/SFPCUG. Meetings: 3rd Mondays, 7:30 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Margaret Gwathmey, (415) 982-4221.

TRS Nybblers. Meetings: 2nd Friday, 8 PM, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem solving committee.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed. 6 PM Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

WordPerfect SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Debbie Foster, (415) 285-4534.

KAYPRO

BAKUP. Meetings: 3rd Tuesdays, 7:30 pm, Albany Senior Center, 846 Masonic Ave., Albany. Call: Bob Athey, (415) 526-3541.

Kay+Fun Peninsula Computer Club. Meetings: 7:30 PM, Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415) 572-8219. Call: 593-9981.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

MACINTOSH

Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembeley. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call; (415) 771-5830/.398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs. 6 PM Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs. San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs. San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, 724 Allston Way (@4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415) 486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7 pm, UC-Berkeley Extension Annex, 1930 Market St., Rm., #2G. Call: 641-GMUG

HyperCard SIG/GMUG. Meetings: 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

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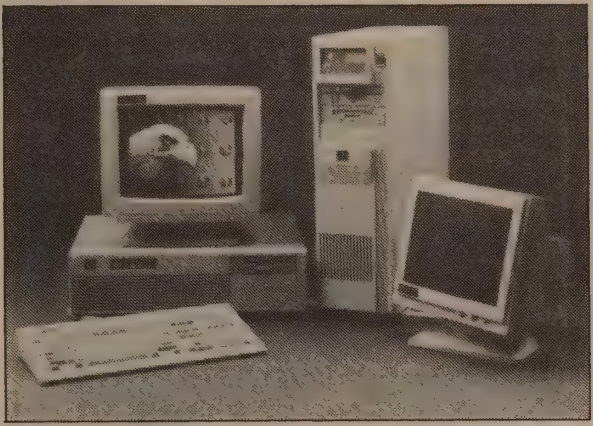

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Technical reference manual

SYSTEM	LANDMARK SI	NORTON SI
Trans/PS286-20	26.7	23
Trans/PS386-24	31	31.6
Trans/PS286-16	21.4	18.7
Trans/PS286-12	16	13.3
COMPAQ 386-16	20	18.7
WYSE 386-16	20.6	15.3
IBM MODEL 80	20	15.3
COMPAQ 286-12	11.7	10.3
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AST 286-10	13	11.5

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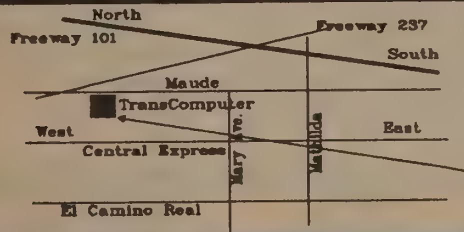

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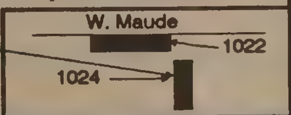

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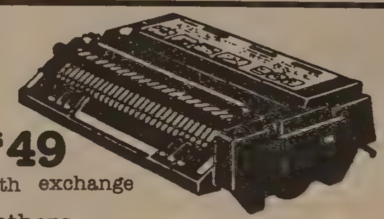

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Macintosh SIG/SEF. Apple Cafeteria. Call for dates and time. Tony Meadow, 644-9400.

MacNexus — Sacramento's Macintosh Users Group. Meetings: 3rd Thurs. 6:30 PM Call (916) 446-2411 for info. 350 members, but still informal. Extensive public domain collection.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi/Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408) 947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: $25; public membership: $35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West Meetings: 2nd Fri. 8 PM Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James (415) 426-8756 eves, Mike, (415) 838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 PM, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 PM - 9:30 PM, Hewlett Packard-Cupertino-Oak Room Bldg., 48 Pruneridge, 100 yds. est of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, 356-8805.

Mirosoft Word SIG of the SVCS. Meetings: 4th Mon. 7:30 PM Hewlett—Packard, Oak Room, Pruneridge at Wolfe, Cupertino. Contact Bill West (408) 356-8805 or Hunter Jackson (4080 446- 4097.

MINDSET

San Francisco Mindset Users Group. Meetings: 2nd Thursdays, 7 pm. Call: (415) 626-4240.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center,846 Masonic Street (just north of Solano) in Albany, CA. Voice:(415) 534-4257. BBS:(415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 1st and 3rd Thur. 7:30 PM Room 209C at College of Alameda. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, 998-8821.

ORACLE

Northern California Oracle UG. Meetings: Call (408) 738- 8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

San Francisco Paradox Users Group. Meetings: 3rd Wednesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

San Francisco Paradox Users Group, South Bay Chapter. Meetings: 3rd Tuesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

TANDY/RADIO SHACK

BYTE Bandits of America. Meetings: Campbell. Call (408) 379-2774 for info.

CoCoByte. Meetings: Last Saturdays; 2 pm-4 pm. Supporting the Tandy Color Computer 11,2 or 3 with Spanish, English & French software. Write to: CoCoByte, c/o Fabian Rodriguez, A.A. 5976, Cali-COLOMBIA.

Model 100, 102 & 200 Support. Meetings: Int'l support by mail, voice & BBS. Free on-line weekly news letter. Write Club 100 984 Hawthorne Dr., Walnut Creek, CA 94596. Or call (415) 937-5039.

Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. $8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

TRS Nybblers. Meetings: 2nd Fri. 8 PM Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS, CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415) 522-5960 or Bruce Jarvis (415) 846-3575.

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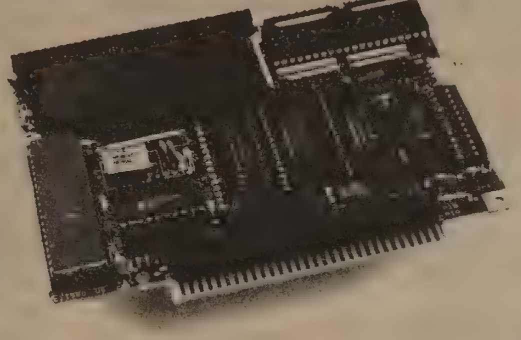

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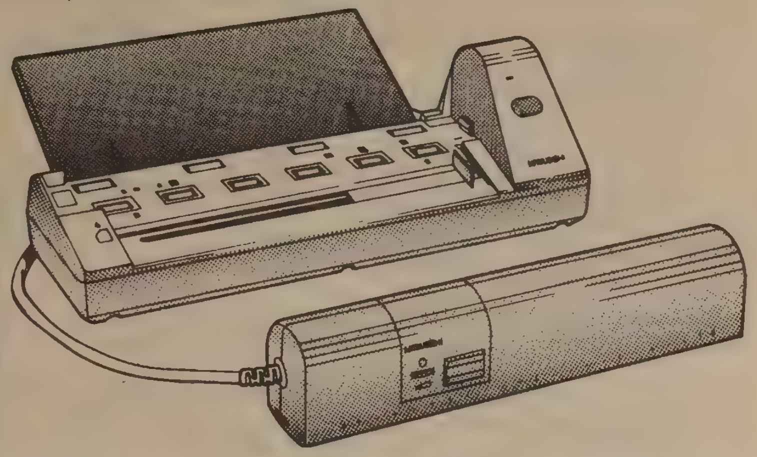

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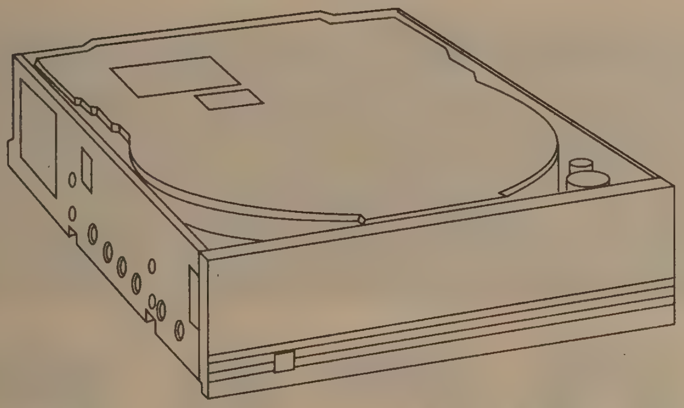

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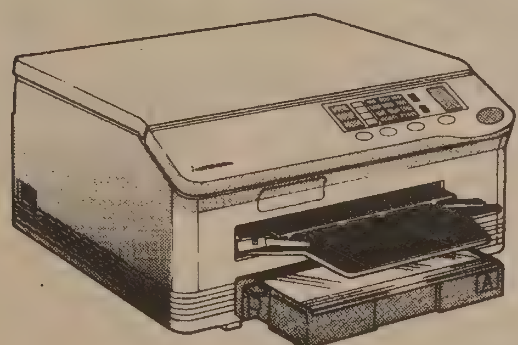

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Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark CA 94560.

S—100

S—100 Business Users Group. Meetings: 4th Tues. 7:30 PM Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408) 262-5150, 8-N-1,2400/1200/300.

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Brea 99'ers Users Group. Meetings: 1st Mon. 7:30 PM Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415) 530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714) 686-0336.

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Timex Sinclair East Bay Z80 Users Group (TSEBZUG). John Ezike, (415) 843-5507.

Timex Sinclair Peninsula Users Group (TSPUG). Contact George Mockridge, (408) 878-1773.

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat. 9 AM Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

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IBM TALKS TOUGH

continued from page 50

regard to each other? Who needs one, who needs the other?

Well, my view at this point in time is that OS/2 is a major player in IBM's SAA strategy; therefore it's extremely important in the large account product offerings that we're making. It represents the key strategic direction for IBM. We have many customers who want to take advantage of UNIX applications, and the technical workstation arena is an important one. We believe that our AIX offering is superior to most UNIX offerings available in the industry, and we want to respond to our customers' needs on AIX. We've said we're going to address the relationship between AIX and SAA to insure that that version of UNIX ties better to SAA than any other.

Right now the way I'd summarize it is for most of our customers' general computing environments, we think DOS, OS/2 and SAA is the way to go. For those customers who want to take advantage of UNIX applications, we think our implementation is superior, and we're going to enhance it through time, and we're going to make sure those two relate well together.

What do you see as the biggest challenges facing your division?

We're in the process of delivering on the promises of our new product line. We originally committed that we were going to be shipping OS/2 in its full form by October and November of 1988, and we're about to deliver on that. We introduced the Micro Channel, and high-function members of our family have been doing very well in terms of customer acceptance, and we're going to be filling out the capability associated with the Micro Channel and the functions that we'll put in place. We've said we're going to enhance our product line at every price point frequently, and we're going to do that.

We've really made a commitment to provide leadership technology and a leadership family, and to continually enhance it through time. It's a very aggressive set of commitments. And so just continuing to do what we said we were going to do, I think, is the most aggressive commitment that we have.

Are you concerned with how long it's taking OS/2 to get to market?

Well, when we announced it, we said that we were going to ship the first release of Standard Edition in the first quarter of '88, first release of Extended Edition in the third quarter of '88; we shipped them in December '87 and July '88 respectively. We said we would be shipping OS/2 in October or November with the Presentation Manager, and that's where we are.

It's pretty hard to have a product accepted before it's shipped. Or to have the applications that take advantage of it available before the operating system is. So when people say "the slow acceptance of OS/2," I really don't know what they're talking about.

It's just that it's not quite there yet?

Well, but it's coming on the schedule we committed, so, I mean, you can sort of look back to April of '87 and say, gee, your schedule isn't aggressive enough, but you can't look at what's happening today and say the acceptance is slow, because we're on schedule.

How are you finding your relations with software developers?

Well, we believe that literally all the major software developers are committed to applications on OS/2.

We introduced this strategy last year. The competitors have now sort of said, yeah, you really do need an extended bus. We said we were going to deliver OS/2 and we're planning to deliver OS/2. I mean, our plan is coming to fruition, it appears over the next three to six to nine months, our products are being well accepted, we're continuing to enhance our product line at every price point—I think we're doing what we said we were going to do.

Do you envision—I'm not going to ask you to announce vaporware . . .

(laughs) What are you going to ask me?

I'm going to ask you how PS/2s and laptops might converge.

I think having portable capability is important, and the first area I would focus on would be a high-function portable, which is perhaps 386-based and completely compatible with our, for instance, Model 70 desktop. So that would be the first area I'd look at in terms of performance. I think it's important.

You are licensing PS/2 technology, and some companies have taken you

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IBM TALKS TOUGH

up on it, while others are going this EISA route.

I think a lot of people seem to be going both routes.

I'll tell you. We offer our intellectual property; as a matter of our policy we do not discuss who we're working with, and who we're having discussions with and what the arrangements are. Occasionally someone who signs a license agreement will decide to announce that they have, like Dell and Amstrad have done. I think you'll probably see a lot more of that sort of thing at Fall COMDEX.

Do you view the open architecture policy you had with the PC, compared to the relatively stringent arrangement you have with the PS/2 and the Micro Channel, as a necessary historical aberration for that particular time, and PS/2 as more in keeping with IBM's usual way of doing things?

Let me tell you that we feel that we're still providing an open architecture. With the PC we really used off-the shelf components, we used stuff that everybody could buy, and therefore the contribution we made to design became readily available to everyone else. This next generation of products is a lot more complex. It's a lot more capable.

Frankly, we felt that maintaining openness was important, but we raised the level in terms of the interface of the machine, the logical interface where we supported those open interfaces for the third parties. Now we had to do that to allow us to fulfill our commitment, which says we're going to build on this family to take advantage of new technology. If you have too low a definition of those interfaces, that encumbers you as you try to take advantage of new software and hardware.

So I think we're still on the open track, and what we have is more powerful machines. The logical level of the interface is a little bit higher, but that's of necessity to allow us to commit to our customers that the investment they're buying will allow them to grow with us through time.

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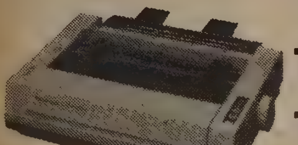

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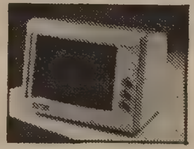

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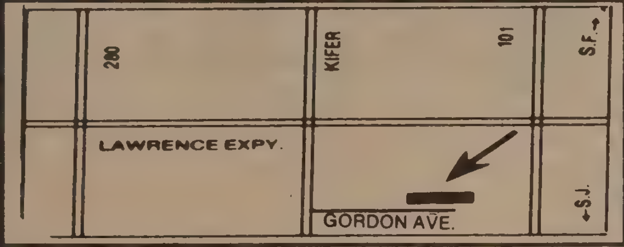

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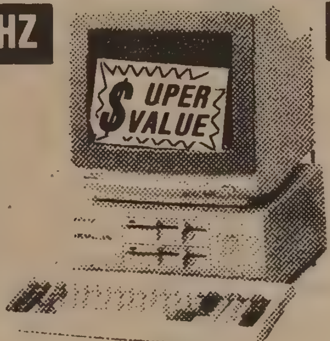

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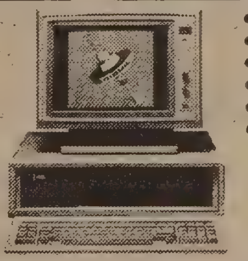

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Wow! Look at the clippings about VDT hazards! Golly, VDTs are responsible for bad backs, varicose veins, eye problems and possibly miscarriages (depending on the source of information). Some kids are developing weak eye muscles from staring at a VDT from too close. X-rays are mysteriously leaking from the leaded glass, say some. Other mysterious things are happening and the fate of civilization hangs in the balance. I see that one group would like the VDT banned as a general health hazard.

It's apparent that we're killing ourselves with these technologies. To combat this plague of scribe-itis, book mania and typewriter madness, there was an old solution. Burn books and destroy the machines. Maybe we should consider a computer burning!

Now those are some interesting clippings. Let's see what else I have. Oh! Here's some letters dated 840 A.D. from my lost relative Gustav Dvorak. Interesting. It seems that scribes are up in arms and want hazardous duty pay (in the form of goat heads) for recopying the same book over and over. Some say that the ink is poisonous and causes all sorts of ailments. Others say scribe work is bad for the back and all that sitting causes varicose veins. Children are being taught how to write at too early an age, says the note, causing eye problems from all that close reading and writing. And apparently rewriting all that information makes it easier for witches to control your life. Pretty scary, kids. I see one group would like the quill and the business of book copying banned as a general health hazard.

Let me dig a little deeper into the pile. Ah, here's some broadsides printed in 1550. It's an article by Isaac Dvorak. It seems that the citizens are panicked over the propagation and use of the dangerous printing press. Apparently fumes from the ink are poisoning the public and operators of the presses are complaining of bad backs. Since reading material is becoming relatively common, there is a fear that people will lose their ability to speak. Complaints about people sitting too much and reading has resulted in the establishment of special varicose vein clinics. Too much reading is said to cause miscarriages in women and nearsightedness in young children. Hmmm, I see one group would like the printing press banned as a general health hazard.

Wow! Here's one from Sir Spencer Dvorak. In an article he wrote for the London *Times* dated Feb. 4, 1820, he says that he discovered tribal documents in dark Africa which indicated that tribal drums used for inter-tribal communication were resulting in the ruination of society there. Apparently the drummers were complaining of bad backs and varicose veins from all the sitting and pounding. Not to mention headaches! The headaches were thought to affect vision, and many drummers reported dizziness. The beat was also making people jumpy and thought to be a leading cause of birth defects too. A concerted effort was being made to ban the drums as a general health hazard.

This was getting pretty interesting. I dug further and found an 1880 article by John E. Dvorak, my great-great-granddad. It was an expose of the hazardous typewriter. It seems that the typewriter was a cause of arthritis in the fingers. The typed word was so small that it was thought to cause nearsightedness in young children. Furthermore, the long hours of sitting at the typewriter were causing people to be hunched over, thus straining the back. Varicose veins were a direct result of too much typing, and all the pounding on the keyboards was surely the cause of uppityness in women. It had something to do with physics. They were making noises about the right to vote. They must be ill. One group decided that they should be banned as a general health hazard.

After reading this, I have to say it's apparent that we're killing ourselves with these technologies. To combat this plague of scribe-itis, book mania and typewriter madness, there was an old solution. Burn books and destroy the machines. Maybe we should consider a computer burning!

"Will this forward march towards a technological Armageddon ever end?" asked the Rev. Daniel Dvorak in 1916. "We must fight this thing called progress in every way we can."

The worst part of this is that it's obvious to all the writers of the past that these inventions ruin man's relationship with women. It was bad enough when a few women secretly learned how to read and write during the scribes day. But it was getting out of control with the invention of movable type. First of all, women were getting ideas! And these weren't the ideas of their husbands, either. They were the ideas of book writers. It was witchcraft.

The typewriter came along and pretty soon everyone could write readable notes to each other. With the invention of carbon paper came early desktop publishing. Freedom of the press on the individual level. It was horrible. Something had to be done. It was easy to do. Recruit people who hated progress and have them condemn the new machines and attribute all sorts of evil to them. Scare people away from the things. It might have worked except that some darned wars came along and distracted people from targeting the real enemies: the typewriter, the printing press.

"Will this forward march towards a technological Armageddon ever end?" asked the Rev. Daniel Dvorak in 1916. "We must fight this thing called progress in every way we can."

I don't know what to say. All I know is that, boy, does my back ache. My eyes are blurred. It's this damned VDT in front of me. Something must be done. ☐

John C. Dvorak graduated from the University of California. he is a contributing editor of PC magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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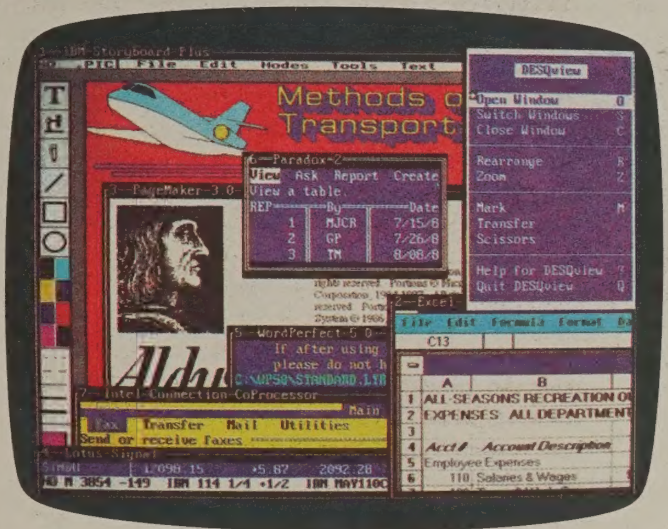
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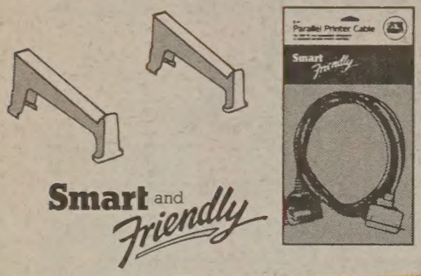

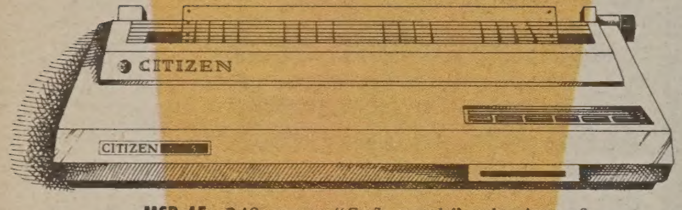

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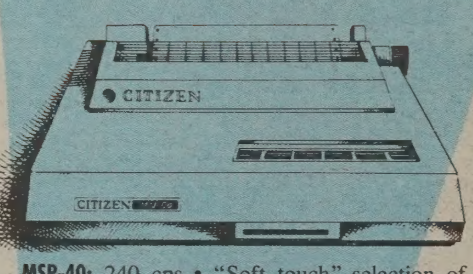

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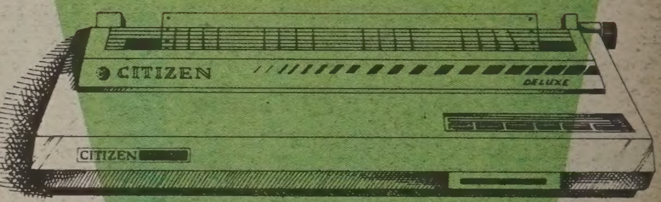

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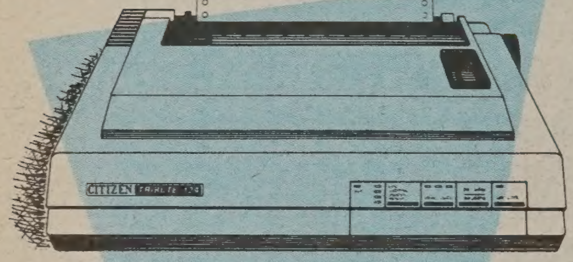

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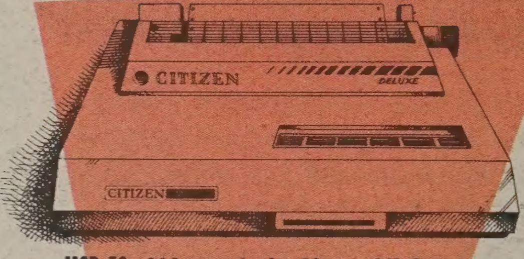

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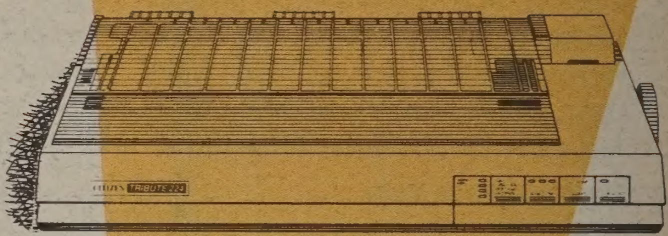

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